

Remedial Action Report Jones Road Ground Water Plume Superfund Site Harris County, Texas EPA Identification No. TXN00605460

EPA Region 6 Remedial Action Contract 2 Contract: EP-W-06-004 Task Order: 0129-RARA-06NK

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June 2019 Revision: 01 EA Project No. 14342.129

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LIST OF ACRONYMS AND ABBREVIATIONS

bgs Below ground surface

CQAP Construction Quality Assurance Plan

DCE 1,2-dichloroethene

EA Engineering, Science, and Technology, Inc., PBC

EPA U.S. Environmental Protection Agency

ft Feet/foot

FM Farm-to-market

HSP Health and Safety Plan

ISB *In-situ* bioremediation

NPL National Priority List

PCE Tetrachloroethene; perchloroethylene

PPE Personal protective equipment PRB Permeable reactive barrier

QA Quality assurance QC Quality control

RA Remedial Action

RAC Remedial Action Contract
RI Remedial Investigation
ROD Record of Decision
ROW Right-of-Way

SAP Sampling and Analysis Plan SHSO Site Health and Safety Officer

Site Jones Road Ground Water Plume Superfund Site

TCE Trichloroethene; trichloroethylene

TCEQ Texas Commission on Environmental Quality

TOM Task Order Monitor

WBZ Water-Bearing Zone

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1.0 INTRODUCTION

The U.S. Environmental Protection Agency (EPA) has authorized EA Engineering, Science, and Technology, Inc., PBC (EA) under Remedial Action Contract (RAC) No. EP-W-06-004, Task Order No. 0129-RARA-06NK, to implement the focused Remedial Action (RA), i.e. *in situ* bioremediation (ISB) of the Shallow Water-Bearing Zone (WBZ), at the Jones Road Ground Water Plume Superfund Site (Site), which is located in the northwest portion of Harris County, Texas. EA executed this RA for the Site as defined in the September 2010 *Record of Decision* (ROD) (EPA 2010) and in accordance with the RA Work Plan dated August 2015 (EA 2015a).

The initial RA Report Revision 00 (EA 2016b) was submitted on September 2016, and included the limited ISB conducted from 26 January to 1 February 2016. This revised RA Report (Revision 01) incorporates hot spot ISB treatment conducted in January 2018 as well as groundwater monitoring results since the initial limited ISB. The results of limited ISB and subsequent work and performance assessment are attached in an updated Technical Memorandum on Results of Limited In Situ Bioremediation which is attached to this report.

1.1 REPORT ORGANIZATION

The organization of this RA Report was based on the EPA guidance document, *Close Out Procedures for National Priorities List Sites* (EPA 2011), and includes the following information:

- Section 1 Organization of this RA Report, general site description and background, and the regulatory history, including information on the RA objectives and the selected remedy outlined in the ROD (EPA 2010).
- Section 2 Construction activities conducted as part of the RA.
- Section 3 Chronology of events.
- Section 4 Performance standards and the quality control (QC) and quality assurance (QA) steps taken to verify that the requirements of the ROD were satisfied.
- Section 5 Inspections performed and health and safety aspects of the work.
- Section 6 Operational dates.
- Section 7 Operations and maintenance.
- Section 8 Contact information for the major design and remediation contractors, EPA Task Order Monitor (TOM) and Texas Commission on Environmental Quality (TCEQ) project manager.

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• The references cited in this report follow Section 8. All figures and tables cited in this report immediately follow the body of the report. In support of this RA Report, Attachment 1 presents the Technical Memorandum on Results of Limited ISB.

1.2 SITE DESCRIPTION

The Site is located in the northwest portion of Harris County, Texas (Figure 1). The source of contamination is the former Bell Dry Cleaners facility, which was located within the Cypress Shopping Center at 11600 Jones Road, approximately 0.5 miles north of the intersection of Jones Road and Farm-to-Market (FM) 1960, outside the city limits of northwest Houston, Texas. The Cypress Shopping Center was constructed in 1984, and the former Bell facility began dry cleaning operations sometime in 1988, using perchloroethylene (PCE), also known as tetrachloroethene. The former Bell facility continued operating through May 2002 when the dry cleaning operations were shut down. The hazardous substances present at the Site include PCE and related daughter products trichloroethylene (TCE), cis-1,2-dichloroethylene (DCE), and vinyl chloride.

The area around the Site includes residential, commercial, and light industrial development. Residential development has been active since the 1960s, effectively eliminating wildlife habitat from the area. Jones Road is the principal north-south corridor through the area, and FM 1960 (approximately one-half mile to the south) provides a southwest-northeast transportation corridor. Commercial development is dominant along Jones Road with residential and limited commercial development along the side streets. Cypress Creek is located approximately one mile to the northwest of the Site, and White Oak Bayou is located approximately 3,500 feet (ft) to the south.

1.3 SITE BACKGROUND

The Site has undergone numerous investigations beginning in 1994 and continuing through 2008; it was proposed to the National Priorities List (NPL) on 30 April 2003, and was finalized to the NPL on 29 September 2003. From August 2003 through May 2008, the TCEQ's statelead contractor performed a remedial investigation (RI) and feasibility study at the Site, which characterized the nature and extent of constituents of concern present in environmental media. During the RI, 19 monitoring wells were installed across the area of the Site (Figure 2). Soil, groundwater, and vapor intrusion samples were collected for analysis, and a bench-scale treatability study was completed to evaluate the application of *in situ* chemical oxidation and bioremediation treatment technologies. Routine quarterly groundwater sampling was also performed.

Homes in the area have private water supply wells, and some wells are shared between multiple homes. From January through November 2008, EPA conducted a time-critical removal action that included the installation of a water line and connections to homes and businesses at the Site. The water line service area is shown on Figure 1. Approximately 51 percent of the well owners agreed to discontinue use of their water wells and begin using water from the water line. The remaining 49 percent of the well owners declined to participate in the water line project and

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continue to use their private water supply wells. The White Oak Bend Municipal Utility District services the water line.

The ROD was signed on 23 September 2010 and sets forth the selected remedy. There is only one planned operable unit for the Site and the selected RA is intended to address all areas of concern. The selected remedy is Alternative 4, *In Situ* Enhancements to Pump and Treat (EPA 2010). The *in situ* treatments involve treating the soil and groundwater in place. In June 2012, an ISB pilot test was executed at the site in order to refine the remedial design. Baseline sampling was conducted, followed by injection of EHC-L® into the deep WBZ and shallow WBZ. Four post-injection sampling events were conducted at one month, three months, six months and three years after injection. Based on the results from the pilot test, limited ISB has been performed and is the focus of this report.

1.4 ENVIRONMENTAL SETTINGS

The Site is located in northwest Harris County, on the Gulf Coast Plain. This physiographic province is characterized by nearly flat topography that gently slopes toward the Gulf of Mexico at approximately five feet per mile or less. Most of the coastal area is low-lying and drained by meandering bayous and sloughs.

Surface water drainage is managed primarily through open roadside bar ditches. Drainage generally flows into the ditches, then to drainage ways that flow south to White Oak Bayou. White Oak Bayou flows southeast into downtown Houston where it enters Buffalo Bayou. Buffalo Bayou flows through the Houston Ship Channel toward Galveston Bay and then to the Gulf of Mexico.

The local geology to approximately 400 ft bgs consists of clay, sand, and silt consistent with the fluvial depositional environment. The subsurface geology consists of Lissie Formation, which is underlain by the Willis Sand, which is underlain by the Goliad Formation and Fleming Formation. The principal water-bearing strata at the Site are the Chicot Aquifer, composed of the Lissie Formation and Willis Sand, and the Evangeline Aquifer comprised of the Goliad Sand and Upper Fleming Formation.

Beneath the Site, groundwater is present within two intervals of the Chicot Aquifer: the shallow WBZ encountered at around 20 to 30 ft bgs, and the deep WBZ encountered around 110 ft bgs. A 50-ft interval of dewatered Chicot Aquifer now separates the perched shallow WBZ from the deep WBZ.

The shallow WBZ is comprised of a silty sand to sandy silt that is interbedded with sandy clay and clayey sand. The shallow aquifer is underlain by clay that is present from approximately 35 to 60 ft bgs. The groundwater flow within the shallow aquifer is toward the south at a gradient of 0.02 ft/ft.

The deep WBZ is present in a poorly graded, very fine-grained sand that is interbedded with silty and sandy clay and clayey sand. The clay beds are generally less than 10 ft thick, but locally they

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retard the vertical movement of water. Therefore, the saturated sand beds commonly have different hydraulic heads within the vertical profile (Gabrysch 1984).

1.5 COMPLETED SCOPE

The completed scope described in this report includes the following tasks:

- Site preparation activities conducted:
 - o Set up of temporary facility and staging area
 - o Access agreements and coordination with property owners
 - Utility location
- RA field activities conducted:
 - o Baseline groundwater sampling
 - Full scale injection of EHC-L[®] and bacteria at 63 ISB injection points (Revision 00)
 - Site restoration
 - o Post-injection groundwater sampling
 - o Hot spot injection of EHC-L® at 10 ISB injection points (Revision 01)
 - o Post-injection groundwater sampling
 - Site restoration

Subsequent sections detail the tasks performed to complete the scope of work.

2.0 CONSTRUCTION ACTIVITIES

Construction activities included site preparation, mobilization, injection, site restoration, baseline and post-injection sampling. Attachment E of Appendix A includes field notes and Attachment F includes photographic documentation of field activities. Figure 14 of Appendix A shows the approximate locations of the injections. Section 3 summarizes the chronology of RA activities.

2.1 SITE PREPARATION

The following sections describe site preparation activities, the temporary facility and staging area, access agreements, and utility locates.

2.1.1 Temporary Facility and Staging Area

The Cypress Shopping Center parking lot was used as a temporary facility and staging area. An exclusion zone was set and maintained around the chemical staging, mixing and injection locations.

2.1.3 Access

Prior to initiating any work at the Site, an access agreement was obtained to all properties where work was conducted. EA staff coordinated with the property owners and identified the proposed ISB injection locations.

2.1.4 Existing Utility Locates

The project area includes roadway rights-of-way (ROWs) and private commercial properties where subsurface injections were conducted. Prior to commencing work, the subcontractor called 811 to obtain ROW and property perimeter location services. A private utility locator then cleared all known and unknown lines using the most appropriate combination of techniques and facility-specific information regarding buried utilities and transmission pipelines. All utilities were located, visibly marked, and identified according to the type of utility.

2.2 REMEDIAL ACTION FIELD ACTIVITIES

The RA activities included pre-injection groundwater sampling, limited ISB injection at 63 points and hot spot treatment at 10 points, and subsequent post-injection groundwater sampling. A chronology of site RA activities can be found in section 3.

All work was performed in accordance with the RA Work Plans (EA 2015a, 2016a), Sampling and Analysis Plan (SAP) (EA 2016c), Health and Safety Plan (HSP) (EA 2015b), and Site Management Plan (EA 2015c). Documentation of the RA field activities related to the preinjection sampling, injection of the ISB amendment, and post-injection sampling are included in the *Technical Memorandum on Results of Limited ISB* in Appendix A.

2.2.1 Management of Investigation Derived Waste

Purge water generated during the groundwater sampling events was properly containerized, profiled and disposed of as non-hazardous waste. Construction debris was properly disposed of.

2.3 DEVIATIONS

There were no deviations from the work plan.

2.4 EVALUATION OF INJECTION AND SAMPLING DATA

Evaluation of groundwater sampling data is documented in the *Technical Memorandum on Results of Limited ISB* in Appendix A.

2.5 SITE RESTORATION

After each injection event was completed, boring locations were backfilled with bentonite and patched with concrete to match the existing surface. Any spilled product was vacuumed up and used for re-injection after being screened for solids and debris.

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3.0 CHRONOLOGY OF EVENTS

This section presents the chronological order of events associated with the focused RA, and ISB of the Shallow WBZ. The relevant milestone activities are listed below.

Activity	<u>Dates</u>
Injection Pilot Test	5 June 2012 – 6 June 2015
Pre-injection sampling	30 November – 3 December 2015
ISB Injection Event	22 January – 2 February 2016
Post-injection sampling	19 – 22 April 2016
Post-injection sampling	20 – 22 September 2016
Post-injection sampling	21 – 23 February 2017
Post-injection sampling	11 – 13 September 2017
ISB Hot Spot Injection Event	27 – 29 March 2018
Post-injection sampling	14 – 17 May 2018
Post-injection sampling	05 – 07 November 2018

4.0 PERFORMANCE STANDARDS AND QUALITY CONTROL

The Construction Quality Assurance Plan (CQAP) (EA 2015d) details the approved construction QA, construction QC plans and procedures. Construction activities carefully adhered to the plans and procedures identified in the CQAP.

The SAP (EA 2016c) identifies the QC requirements related to water sampling. The objective of this portion of the RA was to inject EHC-L® and bacteria to biodegrade site contaminants with the potential to impact the underlying Lower Chicot drinking water source; principally PCE and degradation products TCE and DCE. Analytical data was analyze in accordance with the measurement quality objectives outlined in the SAP (EA 2016c).

4.1 QUALITY CONTROL AND ASSURANCE ACTIVITIES

To ensure that the injection of the ISB amendment followed the work plan and was achieved on schedule, EA maintained a site manager onsite throughout all activities associated with this RA.

4.2 DATA VALIDATION

The analytical data associated with samples collected in November 2015, April 2016, September 2016, February 2017, September 2017, May 2018, and November 2018 were validated. The validation reports are included in Attachment B of Appendix A.

4.3 DOCUMENTATION

Field activities and sampling tasks were documented at the time of execution as discussed below.

4.3.1 Field Documentation

Bound field logbooks were maintained by the EA site manager and team members to provide a daily record of significant events and observations. Logs for field batch-mixing, injection quantities, and injection timeframes were maintained during the injection event. In addition, water level gauging and baseline sampling activities (purging quantities, parameter stabilization, low-flow sampling, etc.) at all wells were recorded on field data sheets.

Populated data sheets and field logbook entries are provided in Attachment C and E of Appendix A, respectively.

4.3.2 Photographic Record

A project photographic record was kept as part of the RA ISB field activities. Attachment F of Appendix A provides photographic documentation of injection activities. The EA site manager and field staff used digital cameras to create the photographic record.

5.0 INSPECTIONS

This section addresses activities and issues associated with completing the limited ISB RA at the Site. Section 5.1 discusses the pre-final and final inspection and Section 5.2 discusses site health and safety.

5.1 PRE-FINAL AND FINAL INSPECTION

No pre-final or final inspection was conducted.

5.2 HEALTH AND SAFETY

Site-specific health and safety procedures were implemented during the limited ISB RA at the Site in accordance with the HSP (EA 2015b). These procedures were designed to protect the health and safety of workers and visitors while present at the Site and were enforced by EA's site health and safety officer (SHSO) during the limited ISB RA activities. The following sections discuss levels of protection, hazard evaluation and control, health and safety meetings, and health and safety incidents.

5.2.1 Levels of Protection

The personal protective equipment (PPE) requirements were set at Level D, consisting of coveralls or work clothes, safety-toed boots, hard hat (as needed), safety glasses, high-visibility

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reflective vest, hearing protection (as needed), leather gloves (as needed), and nitrile gloves (as needed) for all site activities.

5.2.2 Health and Safety Training

The SHSO and the site field personnel were trained, as required, to meet the requirements of the U.S. Department of Labor, Occupational Safety and Health Administration Standard, 29 Code of Federal Regulations 1926.65, *Hazardous Waste Operations and Emergency Response* and qualify as hazardous waste site workers. Onsite management and supervisors who were directly responsible for hazardous waste site workers received at least an additional eight hours of specialized supervisor training.

5.2.3 Health and Safety Meetings

All personnel on-site, including EA and subcontractor employees, attended mandatory daily health and safety meetings, which were conducted by the EA SHSO or a designated alternate. Protocol and emergency response procedures established in the HSP (EA 2015b) were discussed prior to construction activities and all personnel were required to read the HSP and sign the compliance agreement. Daily safety meetings usually began with a brief synopsis of planned activities and identification of any physical, chemical, or biological hazards associated with those activities. Other topics discussed each morning included PPE requirements, emergency procedures, proper communication skills to be used to prevent accidents, emergency contacts, location of emergency telephone numbers, first aid kits, and the route to the nearest hospital. All participants at the daily health and safety meetings were required to sign the attendance log kept by EA's SHSO.

5.2.4 Health and Safety Incidents

No health and safety incidents occurred.

6.0 OPERATIONAL DATES FOR LIMITED ISB REMEDY

The limited ISB remedy became operational immediately after injection was completed to establish the permeable reactive barrier (PRB). A PRB is a subsurface wall of reactive material that treats groundwater as it passes through. Treatment commenced immediately following injection, and therefore the PRBs were operational at that point. Optimal treatment within the PRB is expected to occur once the bacteria culture population reaches maximum size.

Injection
Injection
ISB Hot Spot Injection

Operational Date
1 February 2016
27—29 March 2018

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7.0 OPERATION AND MAINTENANCE OF ISB REMEDY

There is no scheduled operation and maintenance required as part of the ISB RA activities; however, sampling of site wells is necessary following injection to monitor groundwater conditions and to assess progress of the remedy. Maintenance of the groundwater pH will be assessed to ensure optimal conditions for bacterial growth.

8.0 CONTACT INFORMATION

The EPA TOM was:

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The TCEQ Project Manager was:

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Texas Commission for Environmental Quality
Remediation Division (MC-136)
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Austin, TX 78753
512-239-0761
Marilyn.Long@tceq.texas.gov

EPA used the following contractor for oversight and implementation of the limited ISB RA:

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405 S. Highway 121, Building C, Suite 100
Lewisville, TX 75067
972-315-3922
Contract No.: EP-W-06-004
Task Order No.: 0129-RARA-06NK

The EA Project Manager was:

Pat Appel EA Engineering, Science, and Technology, Inc., PBC 405 S. Highway 121, Building C, Suite 100 Lewisville, TX 75067 972-315-3922

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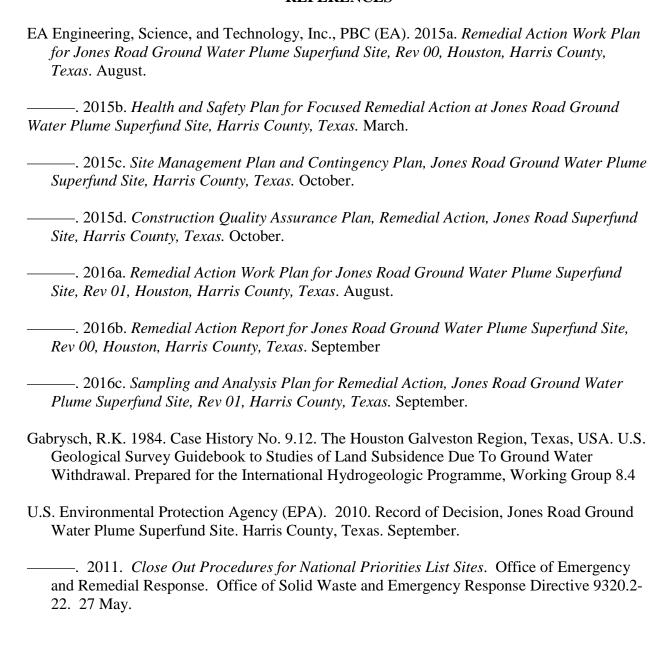
EA Engineering, Science, and Technology, Inc., PBC

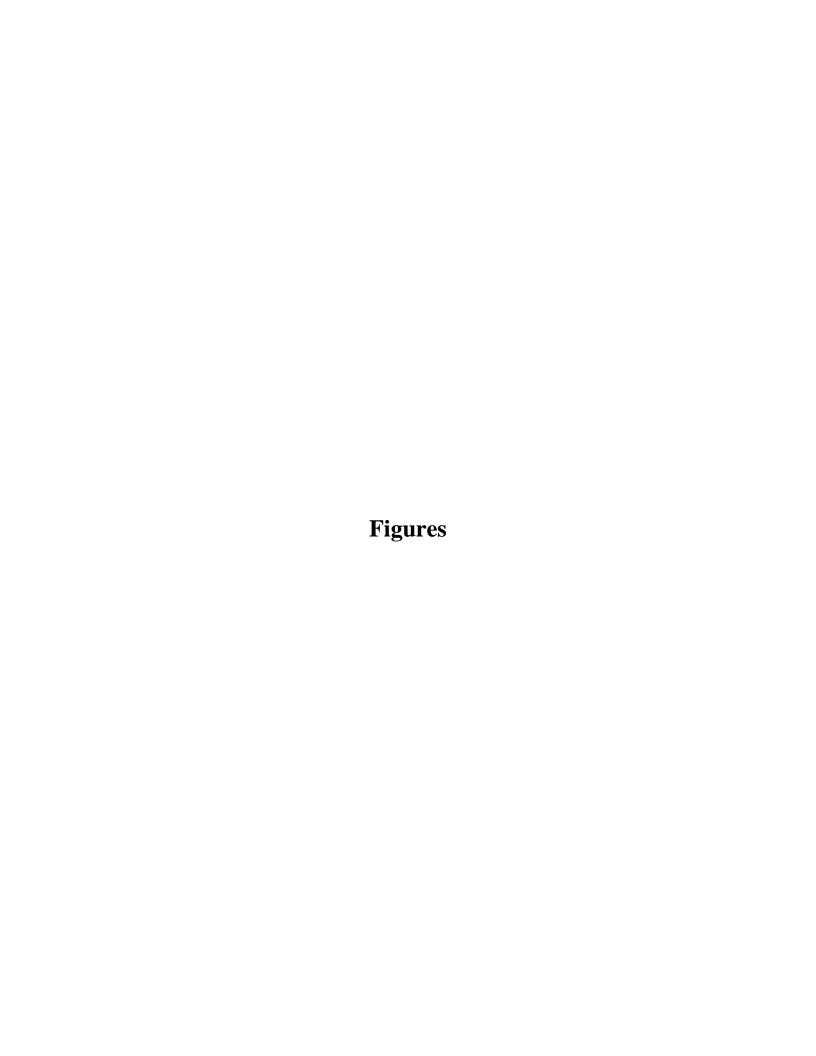
EA used the following subcontractor for the limited ISB RA:

Vista Geoscience 130 Capital Drive, Suite C Golden, CO 80401 281-310-5560

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REFERENCES





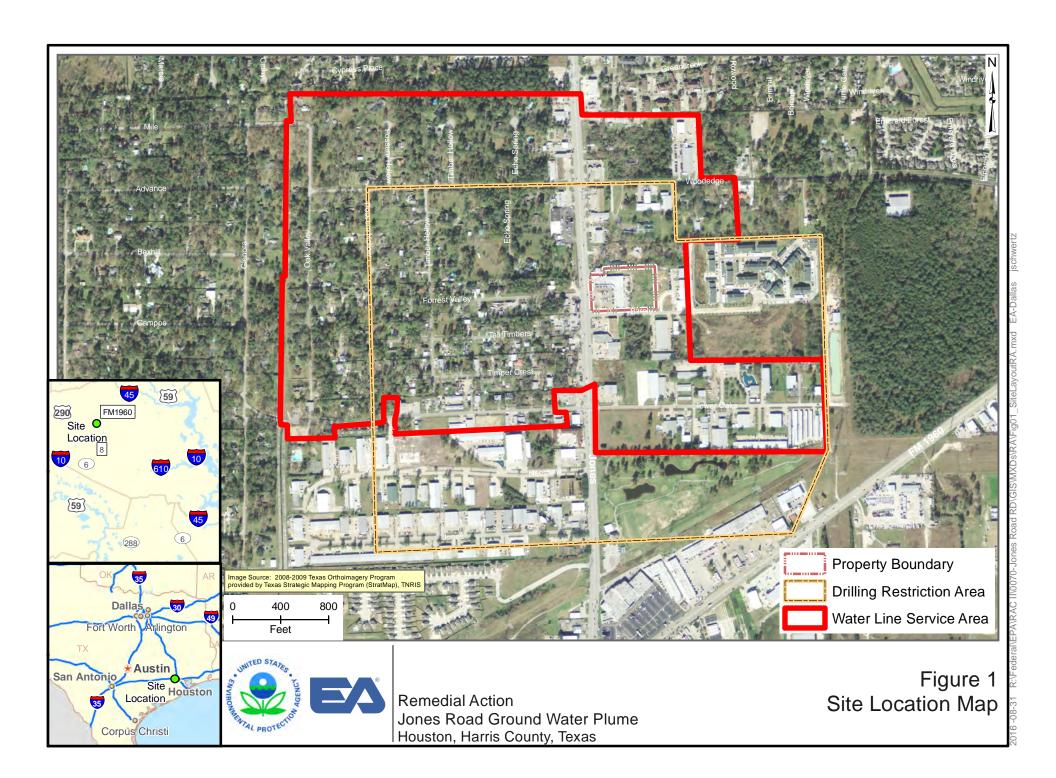








Image Source: 2008-2009 Texas Orthoimagery Program provided by Texas Strategic Mapping Program (StratMap), TNRIS

Remedial Action Jones Road Ground Water Plume Houston, Harris County, Texas Figure 2 Well Location Map

Appendix A

Technical Memorandum on Results of Limited ISB



Technical Memorandum on Results of Limited In Situ Bioremediation Jones Road Ground Water Plume Superfund Site Harris County, Texas EPA Identification No. TXD000605460

Remedial Action Contract 2 Full Service Contract: EP-W-06-004 Task Order: 0129-RARA-06NK

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ACRONYMS AND ABBREVIATIONS

μg/L Microgram per liter

bgs Below ground surface

CLP Contract Laboratory Program

CVOC Chlorinated volatile organic compounds

DCE Dichloroethylene DO Dissolved oxygen

EA Engineering, Science, and Technology, Inc., PBC

EPA U.S. Environmental Protection Agency

ft Feet (foot) FM Farm to Market

ISB *In situ* bioremediation

MCL Maximum Contaminant Level

mg/L Milligram per liter

MNA Monitored natural attenuation

mV Millivolt

ORP Oxygen reduction potential

PCE Tetrachloroethylene; Perchloroethylene

pH Log of concentration of hydrogen ions, an index of acidity

psi Pound per square inch

RA Remedial Action

RDC Reductive dechlorination

Site Jones Road Groundwater Plume Superfund site

SM Standard Method SVE Soil vapor extraction

TCE Trichloroethylene

TM Technical memorandum TOC Total organic carbon

VC Vinyl chloride

VOC Volatile Organic Compound

WBZ Water-bearing zone

1.0 INTRODUCTION

The U.S. Environmental Protection Agency (EPA), under a Remedial Action Contract, has authorized EA Engineering, Science, and Technology, Inc., PBC (EA) No. EP-W-06-004, Task Order No. 0129-RARA-06NK to implement a focused Remedial Action (RA). The RA includes *in-situ bioremediation* (ISB) of the shallow water-bearing zone (WBZ) at the Jones Road Groundwater Plume Superfund Site (Site) located in the northwest portion of Harris County, Texas.

EA executed the RA at the Site as defined in the September 2010 Record of Decision (EPA 2010) and in accordance with the RA Work Plan dated September 2015 (EA 2015). This technical memorandum (TM) summarizes the results of the sampling events associated with the ISB injections and evaluates the ISB performance. The initial TM was submitted in September 2016 (EA 2016) and this revised TM (Revision 01) incorporates hot spot injection conducted in January 2018 as well as post injection groundwater sampling results.

1.1 SITE DESCRIPTION

The Site is located in northwestern Harris County, Texas (Figure 1). The source of site contamination is the former Bell Dry Cleaners facility, located within the Cypress Shopping Center at 11600 Jones Road, approximately one-half mile north of the intersection of Jones Road and Farm to Market (FM) 1960, outside the city limits of northwest Houston, Texas. The Cypress Shopping Center was constructed in 1984, and the former Bell facility began dry cleaning operations sometime in 1988, using tetrachloroethylene, also known as perchloroethylene (PCE). The former Bell facility continued operating through May 2002 when the dry-cleaning operations were shut down. The hazardous substances present at the Site include PCE, and related daughter products trichloroethylene (TCE), 1,2-dichloroethylene (DCE), and vinyl chloride (VC).

The area around the Site is characterized by residential, commercial, and light industrial development. Residential development has been active since the 1960s, effectively eliminating wildlife habitat from the area. Jones Road is the principal north-south corridor through the area, and FM 1960 (approximately one-half mile to the south) provides a southwest-northeast corridor. Commercial development is dominant along Jones Road with residential and limited commercial development along the side streets. Cypress Creek is located approximately one mile to the northwest of the subject area, and White Oak Bayou is located approximately 3,500 feet (ft) to the south.

1.2 GEOLOGY AND HYDROLOGY

The site is located within the West Gulf Coast Plain, which is part of the Coastal Plain physiographic province. The subsurface geology at the Site consists of Lissie Formation, which

is underlain by the Willis Sand, which is underlain by the Goliad Formation and Fleming Formation. The principal water-bearing strata at the Site are the Chicot Aquifer, composed of the Lissie Formation and Willis Sand, and the Evangeline Aquifer comprised of the Goliad Sand and the Upper Fleming Formation. The Chicot Aquifer is above the Evangeline Aquifer.

Water is encountered at two intervals within the Chicot Aquifer beneath the site: the shallow WBZ encountered at around 20 to 30 ft below ground surface (bgs), and the deep WBZ, encountered around 110 ft bgs. A 50-foot interval of dewatered Chicot Aquifer separates the bottom of the Lissie Clay, which perches the shallow WBZ from the deep WBZ.

The shallow WBZ is comprised of a silty sand to sandy silt that is interbedded with sandy clay and clayey sand. The shallow aguifer is underlain by clay that is present from approximately 35 to 60 ft bgs. The groundwater flow within the shallow aquifer is toward the south at a gradient of 0.02 ft per foot.

The deep WBZ is present in a poorly graded, very fine-grained sand that is interbedded with silty and sandy clay and clayey sand. The clay beds are generally less than 10 ft thick, but locally they retard the vertical movement of water. Every sand bed, therefore, has a different hydraulic head (Gabrysch 1984).

1.3 **ISB GOALS**

The ISB goal is to reduce the site contaminants of concern in the shallow WBZ to the remedial cleanup goals as shown below:

> Tetrachloroethene 5 microgram per liter (µg/L)

Trichloroethene $5 \mu g/L$ cis 1,2-Dichloroethylene $70 \mu g/L$ trans 1,2Dichloroethylene $100 \mu g/L$ Vinyl Chloride $2 \mu g/L$

2.0 **CHRONOLOGY OF EVENTS**

The ISB was conducted in phases: (1) baseline sampling, (2) injection of EHC-L[®] into the shallow WBZ, (3) post-injection sampling, (4) hot spot injection of EHC-L[®] into the shallow WBZ, and (5) post hot spot injection sampling.

2.1 **BASELINE SAMPLING**

Baseline sampling was conducted between 30 November and 3 December 2015.

2.2 INJECTION OF EHC-L®

Initial injection of EHC- L^{\otimes} into the shallow WBZ was conducted over a 7-day period, 26 January 2016 – 1 February 2016. EHC- L^{\otimes} , which is a commercially available product was injected to the shallow groundwater to promote reductive dechlorination (RDC).

2.3 POST-INJECTION SAMPLING

The following post-injection sampling events occurred after the initial full scale ISB injection:

- 19 22 April 2016 Performed post-injection sampling event #1 was conducted and 15 monitoring wells were sampled.
- 20 22 September 2016 Performed post-injection sampling event #2 was conducted and 14 monitoring wells were sampled.
- 21 23 February 2017 Performed post-injection sampling event #3 was conducted and 14 monitoring wells were sampled.
- 11 13 September 2017 Performed post-injection sampling event #4 was conducted and 14 monitoring wells were sampled.

2.4 HOT SPOT INJECTION OF EHC-L®

Hot spot injection of EHC-L[®] into the shallow WBZ was conducted over a 7-day period, 21 March 2018 – 27 March 2018.

2.5 POST-INJECTION SAMPLING

The following post-injection sampling events occurred after the hot spot ISB injection:

- 14 17 May 2018 Performed post-injection sampling event #6 and 13 monitoring wells were sampled.
- 5-7 November 2018 Performed post-injection sampling event #7 and 13 monitoring wells were sampled.

3.0 OVERVIEW OF REDUCTIVE DECHLORINATION PROCESS

This section describes the chlorinated solvent biodegradation process, including RDC, enhanced monitored natural attenuation (MNA) through biostimulation and bioaugmentation for enhanced MNA.

3.1 REDUCTIVE DECHLORINATION

Biodegradation reactions can occur under a wide range of environmental conditions. The dominant biodegradation mechanism in most groundwater environments for chlorinated contaminants is RDC, which is evidenced by the presence of PCE daughter products: TCE, DCE, and VC.

Chlorinated solvents such as PCE, TCE, and trichloroethane are biodegraded by reductive processes. Naturally occurring, subsurface microorganisms possess the ability to biodegrade chlorinated volatile organic compounds (CVOCs) (e.g., PCE) to non-chlorinated, environmentally acceptable end products (e.g., ethene); carbon dioxide; water; and chloride (Major *et al:*. 1991 and 1995; Edwards and Cox 1997; AFCEE 2004).

RDC occurs under anaerobic conditions and involves the sequential replacement of chlorine atoms on the alkene molecule with hydrogen atoms. Although thermodynamically favorable, most of the reactions involved in chlorinated aliphatic hydrocarbon reduction and oxidation do not proceed abiotically.

Under reducing conditions, PCE serves as an electron acceptor and is dechlorinated to TCE, DCE, VC, and ethene. For this type of reaction to be thermodynamically favorable, the redox potential of the groundwater must be very low (i.e., negative oxidation-reduction potential [ORP]), thereby excluding the presence of dissolved oxygen (DO). PCE is the most susceptible to RDC because it is the most oxidized (i.e., chlorinated). Conversely, VC is the least susceptible to RDC because it is the least oxidized (i.e., chlorinated) of these compounds. As a result, the rate of RDC decreases as the degree of chlorination decreases (Vogel and McCarty 1985; Bouwer 1994).

RDC has been demonstrated under nitrate- and iron-reducing conditions, but the most rapid biodegradation rates, affecting the widest range of chlorinated aliphatic hydrocarbons, occur under sulfate-reducing and methanogenic conditions (Bouwer 1994). Because chlorinated aliphatic hydrocarbon compounds are used as electron acceptors during RDC, there must be an appropriate source of carbon to act as an electron donor for microbial growth in order for this process to occur (Bouwer 1994).

Efficacy of RDC via injection of EHC-L® at the site can typically be evaluated by determining:

- The relative difficulty of distributing EHC-L® into the impacted shallow WBZ of the Chicot Aquifer (i.e., the hydraulic consideration);
- The ability of the EHC-L® to create appropriate anaerobic conditions to facilitate enhanced RDC;

- The ability of the EHC-L® to degrade PCE, TCE, and DCE through VC to the end products, ethene or ethane;
- The rate at which degradation occurs; and
- The amount of deleterious byproducts (e.g., VC accumulation and increased metals concentrations) generated.

3.2 ENHANCED ATTENUATION THROUGH BIOSTIMULATION

An adequate supply of electron donors is required to promote the complete RDC of chloroethenes. Potential carbon sources include natural organic matter, fuel hydrocarbons, or other anthropogenic organic compounds. At sites where the existing supply of electron donors in groundwater is scarce, a remedy can be designed to deliver electron donors to the subsurface (a process referred to as biostimulation). Simple organic carbon compounds such as alcohols (e.g., methanol, ethanol); organic acids (provided by lactate and acetate); sugars (provided by molasses); or edible oils (e.g., soybean, canola, or olive oil) can serve as electron donors for the dechlorination reaction.

Soluble electron donors such as organic acids and alcohols are often employed in remedial systems, for sites of moderate-to-high hydraulic conductivity, where rapid treatment is required. Low-solubility electron donors, such as emulsified soybean oil and oleate, are often used at sites where hydraulic conductivity is low and/or slower treatment is acceptable. The selection of an appropriate electron donor for a given site is a function of a variety of site-specific conditions, including hydraulic conductivity of the impacted formation, objectives for cleanup timeframe, contaminant and groundwater chemistry, potential for secondary impacts to drinking water quality, and cost.

Electron donor consumption is dependent on the target CVOC concentration and the groundwater geochemistry (i.e., presence of naturally occurring electron acceptors such as oxygen, nitrate, and sulfate that will consume the donor). For sites that initially have aerobic conditions, the addition of an electron donor will first stimulate the growth of native aerobic bacteria, which consumes available oxygen. As subsurface conditions become increasingly anoxic and reducing, the aerobic microbial populations decline while anaerobic microbial populations increase and begin to actively utilize available electron acceptors (i.e., nitrate, sulfate, ferric iron, manganese, and organic carbon) in order of greatest to least energy yield.

An ORP of less than -100 millivolts (mV) and a DO concentration less than 0.5 milligrams per liter (mg/L), in combination with a decline in nitrate and sulfate concentrations, are indications that suitable subsurface conditions exist for RDC. The mass of amendment required for biostimulation is determined using the stoichiometric demand exerted by the known quantities of electron acceptors, either naturally occurring or in contaminants. The quantity of electron

acceptors is calculated in electron equivalents, and then a safety factor is applied to quantify the amount of electron donor to be added during the biostimulation period.

4.0 ISB FIELD ACTIVITIES

The ISB activities included baseline sampling, initial full-scale injection of the amendment, hot spot injection, and several post-injection sampling events following the individual injection events. EHC-L® is a cold-water soluble, food-grade formulation with a base composition of controlled-release organic carbon lecithin and an organo-iron compound that is specially designed for injection. It is applied through wells or hydraulic injection networks for the treatment of a wide range of groundwater contaminants. Manufacturer's information regarding EHC-L® is provided in Attachment A. Specifics regarding the ISB and field activities follows.

4.1 BASELINE SAMPLING

Prior to injecting EHC-L[®], pre-injection sampling was conducted at 14 monitoring wells from 30 November 2015 – 3 December 2015. Each monitoring well was gauged using an oil/water interface probe prior to purging to document the depth of groundwater from top of the well casing. The depth to water values are shown in Table 1. Field parameters including DO, pH, ORP, temperature, conductivity, and turbidity were measured in the field. The field geochemistry results are shown in Table 2. Pre-injection groundwater samples were collected using the low-flow sampling technique.

Samples were analyzed for dissolved metals by Contract Laboratory Program (CLP) ILMO5.3, volatile organic compounds (VOCs) by CLP OLM04.2, total organic carbon (TOC) by Standard Method (SM) 5310D-2000, dissolved gases by EPA Method RSK-175, ammonia by EPA Method 350.1, orthophosphate by SM4500 PE-1999, and nitrate-nitrite nitrogen by EPA Method 353.2.

Groundwater samples were submitted to EPA Region 6 Laboratory for analysis of dissolved metals and VOCs. Groundwater samples were submitted to the Test America Laboratories, Inc. located in Houston, Texas for analysis of TOC, dissolved gasses, ammonia, orthophosphate, and nitrate-nitrite nitrogen. The pre-injection sampling results are provided in Tables 3 through 5 and shown on Figures 2 through 13. Analytical laboratory reports are included in Attachment B. Sampling field forms are included in Attachment C.

4.2 INJECTION PROCESS

ISB was conducted in the shallow WBZ using EHC-L[®]. EHC-L[®] was applied through direct-push technology.

On 22 January 2016, Vista GeoScience mobilized to the Site to begin pre-injection activities. EHC-L[®] injections occurred 25 January – 1 February 2016. Site cleanup and demobilization occurred 2 February 2016.

Each batch mixture of EHC-L® and water was mixed on-site by Vista Geoscience per manufacturer instructions (Attachment A). The Vista GeoScience injection report describes the preparation of the injection solutions (Attachment D).

The injection locations were separated into two different areas, A and B, as shown on Figure 14. Injection at area A targeted at the source area, and the concentration of the amendment mixture was higher than that in area B (approximately double in concentration). Amendment mixture was injected using direct-push technology via a 1.5-inch custom retractable injection tool and injections were monitored using digital flow and pressure gauges. Each location was started individually and with increased pressure in five pounds per square inch (psi) increments. Injection logs in the Vista GeoScience injection report (Attachment D) include individual flows, volumes and notes. A total of 6,489 gallons of EHC-L®, 3,344 pounds of EHC-L Dry Mix, 4,798 pounds of potassium bicarbonate, 108 liters of the inoculum, dehalococcoides (DHC), and 40,948 gallons of water was injection into 63 locations.

During the injection, field data was collected by Vista GeoScience and EA. Vista GeoScience completed the injection logs and are included in Attachment D. EA kept field notes regarding the injection process and events and are included in Attachment E. Photographic documentation is included in Attachment F. State of Texas injection well reports are included in Attachment G.

4.3 POST-INJECTION SAMPLING

Following the initial ISB injection the following four post-injection sampling events were conducted:

- 19 22 April 2016 Performed post-injection sampling event #1 and 15 monitor wells were sampled.
- 20 22 September 2016 Performed post-injection sampling event #2 and 14 monitoring wells were sampled.
- 21 23 February 2017 Performed post-injection sampling event #3 and 14 monitoring wells were sampled.
- 11 13 September 2017 Performed post-injection sampling event #4 and 14 monitoring wells were sampled.

During each sampling event each monitoring well was gauged using an oil/water interface probe prior to purging to document the depth of groundwater from the top of the well casing. The depth to water values are shown in Table 1. DO, pH, ORP, temperature, conductivity, and turbidity were measured in the field. The field geochemistry results are shown in Table 2. Pre-injection groundwater samples were collected using the low-flow sampling technique, however, in

instances where the water level was too low for low-flow sampling or recharge was slow to occur a bailer was used to collect a sample.

Samples were analyzed for dissolved metals by EPA Method 6020A, mercury by EPA Method 7470A, VOCs by EPA Method 8260B, TOC by SM 5310D-2000, dissolved gases by EPA Method RSK-175, ammonia by EPA Method 350.1, orthophosphate by SM4500 PE-1999, and nitrate-nitrite nitrogen by EPA Method 353.2.

Groundwater samples were submitted to the Test America Laboratories, Inc. located in Pittsburgh, PA for analysis of dissolved metals and mercury. Groundwater samples were submitted to the Test America Laboratories, Inc. located in Houston, Texas for analysis of VOCs, TOC, dissolved gasses, ammonia, orthophosphate, and nitrate-nitrite nitrogen. The post-injection sampling results are provided in Tables 3 through 5 and presented on Figures 2 through 13. Analytical laboratory reports are included in Attachment B. Sampling field forms are included in Attachment C.

4.4 HOT SPOT INJECTION PROCESS

Results from post injection sampling showed that RDC was beginning to decline in the south of the source area, most specifically MW-20 and MW-22 as summarized in the following:

Well MW-20

- The baseline concentration of PCE in MW-20 decreased over 97 percent a year after the ISB injection. However, as shown on Figure 23, by September 2017 PCE began trending upward.
- TCE concentrations in MW-20 decreased by 96 percent over the first year after ISB, by September of 2017, TCE concentration flatten out (Figure 24).
- The concentration of cis 1,2-DCE slightly increased after the ISB injection, by February 2017, the concentration decreased by 93 percent by February 2017 and started to flatten out by September 2017 (Figure 25).
- The concentration of VC peaked after the ISB injection, decline in February 2017 and flatten out by September 2017 (Figure 27).
- During the baseline sampling event, ethene and ethane were not detected in well MW-20 (Figure 28). Ethene concentrations increased post-injection, with the highest concentrations observed during September 2016 sampling events. Ethane levels increased slightly after the injection, peaking in February 2017.

• After the ISB injection, methane concentrations increased substantially in MW-22, indicating increased methanogenesis but by September 2017 methane concentrations began trending downward (Figures 21 and 34).

Well MW-22

- TCE concentrations in MW-22 decreased almost by 100 percent the first year after ISB, by September 2017 PCE began trending upward (Figure 24).
- The concentration of cis 1,2-DCE slightly increased after the ISB injection, by February 2017, the concentration decreased by 94 percent by February 2017 and started to flatten out by September 2017, which may indicate DCE stall (Figure 25).
- The concentration of VC peaked after the ISB injection, declined in February 2017 and flatten out by September 2017 (Figure 27).
- During the baseline sampling event, ethene and ethane were not detected in well MW-20. Ethene concentrations increased post-injection, with the highest concentrations observed during September 2016 sampling event and began trending downward by February 2017 (Figure 28).

The sample results indicated that RDC had slowed down approximately 19 months after the initial full-scale injection at wells MW-20 and MW-22, and the concentrations of PCE and TCE in these two wells remained elevated and daughter products, DCE and VC appeared to be stall. Therefore, a hot spot injection in this area was proposed.

On 21 March 2018, Vista GeoScience mobilized to the Site to begin pre-injection activities. On 26 March 2018, the site was set up and injections were ready to commence, however, there were delivery issued with the hydrant meter, which cause activities to be delay for a day. Injection was initiated on 27 March 2018.

Each batch mixture of EHC-L® and water was mixed on-site by Vista Geoscience per manufacturer instructions (Attachment A). The Vista GeoScience injection report describes the preparation of the injection solutions (Attachment D).

The hot spot injection was conducted in the same approach as in the initial full scale injection. The target injection interval was four feet approximately from 28 feet bgs to 32 feet bgs. The injection locations are shown on Figure 14, there were a total of ten locations. Amendment mixture was injected via a custom injection manifold, which allowed to injection up to four locations at a time. Each location varied in its flow rates and injection pressures, with the intention of keeping injection pressure below 60 - 70 psi to allow the product to flow into the formation without displacing the water table. Each location was started individually and with increased pressure in five psi increments. Injection logs in the Vista GeoScience injection report

(Attachment D) include individual flows, volumes and notes. A total of 825 gallons of EHC-L®, 375 pounds of EHC-L Dry Mix, 550 pounds of potassium bicarbonate, and 3,600 gallons of water was inject into 10 locations.

During the injection, field data was collected by Vista GeoScience and EA. Vista GeoScience completed the injection logs which are included in Attachment D. Field notes regarding the injection process are included in Attachment E. Photographic documentation is included in Attachment F. State of Texas injection well reports are included in Attachment G.

4.5 POST HOT SPOT INJECTION SAMPLING

Two post-injection sampling were conducted after the hot spot injection; event number 5 (which is the first sampling event after the hot spot injection and the fifth event since the initial full scale injection) was performed between 14 and 27 May 2018 and 13 monitoring wells were sampled, and event number 6 was performed between 5 and 7 November 2018 and 14 monitoring wells were sampled. During each event monitoring wells were gauged using an oil/water interface probe prior to purging to document the depth of groundwater from the top of the well casing. The depth to water values are shown in Table 1. DO, pH, ORP, temperature, conductivity, and turbidity were measured in the field. The field geochemistry results are shown in Table 2. Preinjection groundwater samples were collected using the low-flow sampling technique, however, in instances where the water level was too low for low-flow sampling or recharge was slow to occur a bailer was used to collect a sample.

Samples were analyzed for dissolved metals by EPA Method 6020A, mercury by EPA Method 7470A, VOCs by EPA Method 8260B, TOC by SM 5310D-2000, dissolved gases by EPA Method RSK-175, ammonia by EPA Method 350.1, orthophosphate by SM4500 PE-1999, and nitrate-nitrite nitrogen by EPA Method 353.2.

Groundwater samples were submitted to the Test America Laboratories, Inc. located in Pittsburgh, PA for analysis of dissolved metals and mercury. Groundwater samples were submitted to the Test America Laboratories, Inc. located in Houston, Texas for analysis of VOCs, TOC, dissolved gasses, ammonia, orthophosphate, and nitrate-nitrite nitrogen. The post-injection sampling results are provided in Tables 3 through 5 and presented on Figures 2 through 13. Analytical laboratory reports are included in Attachment B. Sampling field forms are included in Attachment C.

5.0 ISB RESULTS

5.1 INJECTION PRESSURE AND FLOW RATE

The injection rate ranged from <1-10 gallons per minute of EHC-L[®] mixture at 45-160 psi gauge pressure on the injection line. Injection mechanics are summarized in Table 6A and Table 6B.

5.2 CONCENTRATIONS OF CVOCS

Analytical results of CVOCs are presented in Table 5 and Figures 2, 3, 4, 5, and 6 for PCE, TCE, cis DCE, trans DCE, and VC, respectively.

5.3 IN SITU BIOREMEDIATION INDICATORS

ISB indicators including field parameter measurements and laboratory analytical data were used to determine if subsurface conditions were favorable for RDC. The field parameter measurements, including ORP, DO and pH, are summarized in Table 2, and ORP, DO, and pH trends are shown in Figures 15 through 17, respectively. Analytical results for MNA parameters are summarized in Table 4.

Analytical results for dissolved metals are summarized in Table 3 and shown on Figures 11 through 13. Initial dissolved metal trends are shown in Figures 18 through 20. Methane and TOC results are shown on Figures 9 and 10, respectively. Methane and TOC trends are shown in Figures 21 and 22, respectively. Analytical results for chlorinated ethenes are summarized in Table 5 and shown on Figures 2 through 8. Chlorinated ethene trends are shown in Figures 23 through 29 and molar concentrations of chlorinated ethenes for wells with detections are presented in Figures 30 through 35.

6.0 PERFORMANCE EVALUATION

This section evaluates performance of EHC-L® in the shallow WBZ based on the results of groundwater sample results. Both the ISB initial full-scale injection and hot spot injection were intended to promote a groundwater condition favorable for RDC. Groundwater reducing condition was assessed based on the geochemical analysis, i.e., ORP, dissolved metal concentrations, and DO. Evidence of dechlorination, i.e., concentration changes in PCE, TCE, cis DCE, and VC, and production of ethene, ethane and methane as RDC end products were also evaluated and presented in this section.

6.1 ISB INJECTION PERFORMANCE EVALUATION

In order to evaluate the progress of enhanced RDC at the Site, results of baseline samples and post injection samples were compared. Analytical results are presented in Tables 2 through 5 and shown in Figures 2 through 35. A summary of the results is discussed in the following sections.

6.1.1 Geochemical Field Parameter Trends

The favorability for RDC based on the pH, DO, ORP, methane, nitrates, and TOC is presented in Table 7.

Total Organic Carbon

As indicated in the technical guidance, In Situ Bioremediation of Chlorinated Ethene (ITRC 2008), TOC concentrations above 20 mg/L are considered favorable for RDC. Thus, in this report, TOC concentrations below 20 mg/L were considered low, between 20 mg/L and 200 mg/L moderate, and above 200 mg/L high. TOC concentrations are presented in Table 4 and Figure 10, and TOC concentration trends are presented in Figure 22.

The baseline sampling event in December 2015 showed all sampled wells but MW-08 to have TOC concentration below the favorable range for RDC with concentrations under 20 mg/L. MW-08, which is located outside of the treatment areas had a moderately favorable TOC concentration of 35.8 mg/L.

After the ISB injection, on the first sampling event all of the wells that are located in the treatment areas (MW-01, MW-02, MW-06, MW-20, and MW-22) showed favorable TOC concentration, except MW-20 and MW-22. TOC concentration in MW-01, MW-02, and MW-06 decreased over time but remained elevated for approximately six months before dropped to below the favorable level. Effect of the 2016 injection on TOC in MW-20 appeared delayed and TOC concentration increased approximately seven months after the injection; while TOC significantly increased in May 2018 after the hot spot injection near this well. Both injection events did not significantly raise the TOC level in MW-22 to a favorable level. Overall, as of the last sampling event, November 2018, all wells showed TOC concentrations below the favorable range for RDC.

ORP

ORP values below -50 mV were considered slightly reducing and indicative of conditions where RDC may occur (ITRC 2008). ORP values below -100 mV were considered reductive and indicative of conditions where RDC is likely to occur.

ORP measurements of less than -50 mV (within the range at which RDC may occur) were observed in several wells pre-injection process and post injection process, with some exceptions. After the hot spot injection process, ORP measurement were favorable in all wells. ORP concentrations are presented in Table 2 and ORP concentration trends are presented in Figure 15.

Dissolved oxygen

Pre-injection, no DO measurements were below 0.5 mg/L, which is considered favorable to RDC (ITRC 2008). After injection, DO in the injection areas fluctuated but remained relatively low and favorable to RDC. DO concentrations are presented in Table 2 and DO concentration trends are presented in Figure 16.

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pH

The pH measurements observer pre-injection, post injection and post hot spot injection were within the acceptable range of 5 to 9. The pH results are presented in Table 2 and pH trends are presented in Figure 17.

6.1.2 Reduction of PCE Concentrations

The concentrations of PCE before the ISB injection ranged from 5,550 micrograms per liter (μ g/L) in the downgradient area (MW-20) to 14,500 μ g/L in the source area (MW-01). After the ISB injection in 2016, PCE concentrations decreased and had remained below the ISB goal, the maximum concentration level (MCL) of 5 μ g/L in the wells within the treatment areas with the exception of MW-02, MW-20, and MW-22. PCE concentration in MW-02 reduced to below the MCL after the 2016 injection but rebounded close to the pre-injection level in November 2018 (2 years and 10 months after the injection) (Table 5 and Figure 23).

PCE concentration in MW-20 decreased approximately 97 percent one year after the initial full-scale injection, but it remained elevated and increased to 228 μ g/L in September 2017 (Table 5, and Figure 23). Thus, a hot spot injection was conducted in the area in March 2018, which significantly reduced the PCE concentration in MW-20 to 7 μ g/L in May 2018. However, the PCE slightly increase to 21 μ g/L in November 2018 at this well. Similar rebound was observed in MW-22, at which PCE concentration was non-detect from September 2016 to May 2018, and rebounded to 11 μ g/L in November 2018. PCE concentrations are presented in Table 5 and Figures 2, 23 and 30 - 35.

Overall RDC by injection of EHC-L $^{\circledR}$ was highly effective to reduce PCE concentration at the site.

6.1.3 Formation of Daughter Products

Formation and subsequent dechlorination of PCE daughter products provide additional evidence of RDC occurring at the site.

Concentrations of TCE before the initial injection ranged from 957 μ g/L in the downgradient well (MW-22) to 1,990 μ g/L in the source area (MW-01). After the ISB injection in 2016, TCE concentrations decreased to below the MCL of 5 μ g/L in the source area (MW-01 and MW-02) and had been below the MCL until November 2018 (2 years and 10 months after the initial injection), when TCE rebounded considerably at MW-02 (Table 5). In the downgradient well MW-20, TCE concentration decreased approximately 96 percent one year after the initial full-scale injection, but it stalled at a level of 60 μ g/L in 2017 (Table 5). The hot spot injection in March 2018, however reduced the TCE concentration at MW-20 to 8.9 μ g/L based on the May 2018 sample results. The hot spot injection did not provide sustaining reduction and TCE concentration in MW-20 rebounded to 71.3 μ g/L 8 months after hot spot injection.

During RDC, all three isomers of DCE (cis 1,2-DCE, trans 1,2-DCE and 1,1-DCE) can be produced; however, cis 1,2-DCE is the more commonly produced isomer (EPA 1998). After the initial full scale injection, the concentration of cis 1,2-DCE increased around the source area at well MW-01 and then reduced more than 99 percent by September 2016, after which the concentration of cis 1,2-DCE gradually increased to 1,230 µg/L in November 2018 at MW-01. The concentration of cis 1,2-DCE at the other source well, MW-02 however fluctuated and went back to the pre-injection level in November 2018 (Table 5 and Figure 25). Increase in cis 1,2-DCE in the source area can be partially resulted from dechlorination of its parent compounds, PCE and TCE.

On the other hand, concentrations of cis 1,2-DCE slightly increased after the initial full-scale injection and began to trend downward at downgradient wells, MW-20 and MW-22. After the hot spot injection these concentrations continued to decrease. Thus, the hot spot injection appears to be effective to reduce the DCE concentration. cis 1,2-DCE and trans 1,2-DCE concentrations are presented in Table 5 and Figures 4-5, 25-26 and 30-35.

Concentration of VC at source well MW-01 changed in a similar fashion as cis 1,2-DCE and it reduced more than 99 percent by February 2017 and rebounded back to the pre-injection level in November 2018. The other source well, MW-02 also behaved similarly in VC concentration to cis 1,2-DCE concentration and VC concentration had accumulated to a level in November 2018 much higher than the pre-injection level. In downgradient wells, MW-20 and MW-22 however, VC concentration increased after the initial injection and stalled and decreased due to the hot spot injection (Figure 27). VC concentrations are presented in Table 5 and Figures 6, 27, and 30-35.

The presence of ethene, and ethane indicates the RDC process reached completion. In all wells at the treated areas (MW-01, MW-02, MW-06, MW-20 and MW22) accumulation of ethene, ethane, and methane was observed as showed in Figure 28, Figure 29, and Figure 21, respectively.

6.1.4 **Formation of Deleterious Byproducts**

Arsenic, iron, and manganese may become dissolved under reducing condition resulting from the injection. After the first and the hot spot injections, dissolved concentrations of iron, manganese and arsenic each increased in the wells in the treated areas.

Iron and manganese concentrations increased in wells, MW-01, MW-02, MW-06, MW-20, MW-21 and MW-22, above the MCLs of 300 µg/L and 50 µg/L, respectively. By November 2018, the iron and manganese concentrations still remained elevated and higher than the pre-injection levels (Table 3, and Figure 19 for dissolved iron and Figure 20 for dissolved manganese concentrations).

The pre-injection dissolved arsenic concentrations were below the MCL in all monitoring wells other than MW-01 and MW-04. After both injections, the concentrations of dissolved arsenic

increased in the wells in the treated areas and remained above the MCL of 10 μ g/L in November 2018 (Table 3 and Figure 18).

7.0 SUMMARY AND CONCLUSIONS

Based on the sample results collected before and after ISB injections, conclusions are summarized in this section.

- The ISB injection effectively reduced PCE concentrations in the source area to a 99 percent reduction and remained effective in the source area for approximately two years and ten months before rebound took place (Figure 23). MW-02 PCE concentration rebounded to the pre-injection level and the significant rebound in this well may be due to the lower dosing than that in MW-01.
- The ISB injections also effectively reduced PCE concentration in the downgradient area to a 97 percent reduction (i.e. MW-20). The reduction of PCE was not as effective as that in the source area because of lower dosing of the reagents in the downgradient area. The hot spot injection in the downgradient area however, reduced the PCE concentration further. Rebound also took place in November 2018 as in the source area (Figure 23).
- As of November 2018, MW-02, MW-20, and MW-22 PCE concentration was above the MCL of 5 μg/L.
- TCE concentration reduction in the treated areas appear very similar to the PCE concentration reduction. TCE rebound also took place two years and ten months after the initial injection in 2016. MW-20 TCE remained elevated even after the hot spot injection. As of November 2018, only MW-02 and MW-20 TCE concentration was above the MCL of 5 µg/L.
- Daughter products, cis 1,2-DCE and VC were generated considerably in the source area (MW-01 and MW-02) and remained elevated in the last sampling event, November 2018. cis 1,2-DCE and VC concentrations were at or above the pre-injection level in MW-02 and reduced approximately 81 percent and 26 percent, respectively in MW-01 by November 2018.
- cis 1,2-DCE and VC concentrations in the downgradient area (MW-20 and MW-22) in general stalled and remained elevated. The hot spot injection which only treated downgradient area, reduced the concentrations of cis 1,2-DCE and VC in the area significantly. Overall, downgradient wells DCE concentration reduced approximately 96-99 percent, and VC concentration reduced approximately 63-91 percent.

- As of November 2018, cis 1,2-DCE concentration was still above the MCL of 70 μg/L in MW-01, MW-02, and MW-20; and VC concentration above the MCL of 2 μg/L in all wells within the treated areas (MW-01, MW-02, MW-06, MW-20, and MW-22).
- ISB injections promoted reducing condition in the treated area, therefore dissolved metals, iron, manganese, and arsenic concentrations increased and remained elevated above pre-injection level.
- Significant amounts of ethane, ethene and methane were generated, which are the end products from the enhanced biodegradation and reduction of the chlorinated compounds by the ISB injections.

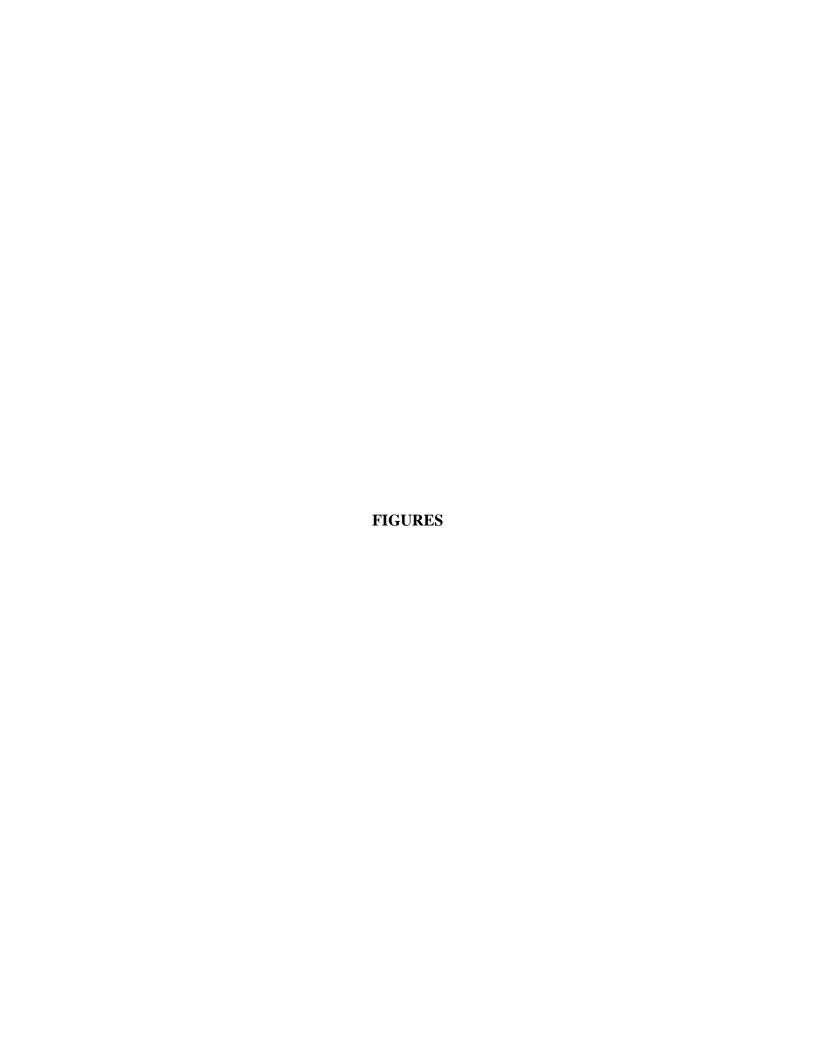
It should note that installation of a soil vapor extraction (SVE) system is ongoing during the preparation of this report. The SVE is designed to remediate the shallow soils in the source area and will be operated through November 2020. Future injection of any reagents in the source area may interfere the SVE operations, therefore additional ISB injection is not recommended during SVE operations.

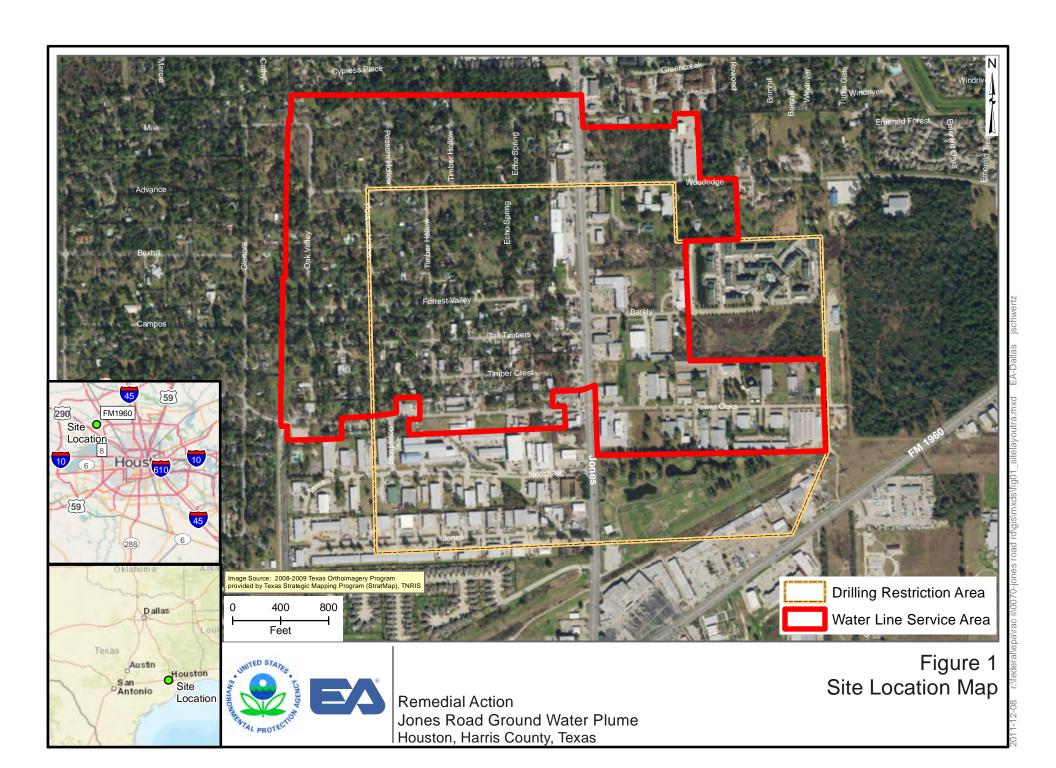
In addition, because of the shallow depth of the groundwater at the site, SVE operations may likely extract groundwater from the shallow WBZ, impacting concentrations of the chlorinated compounds. Therefore, additional sampling should be conducted after SVE completes its operation to evaluate the groundwater condition before any additional ISB injection.

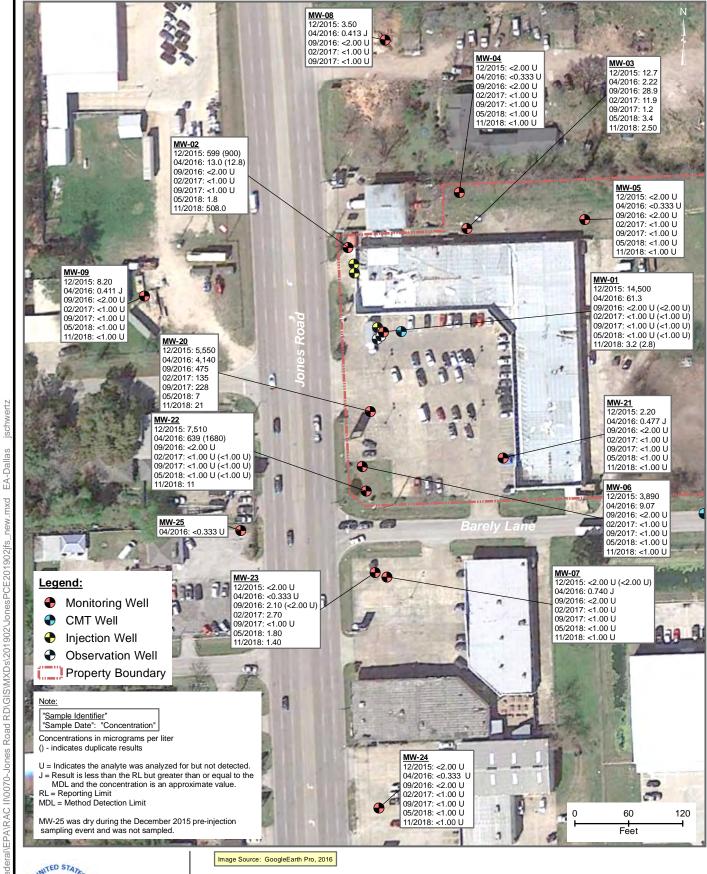
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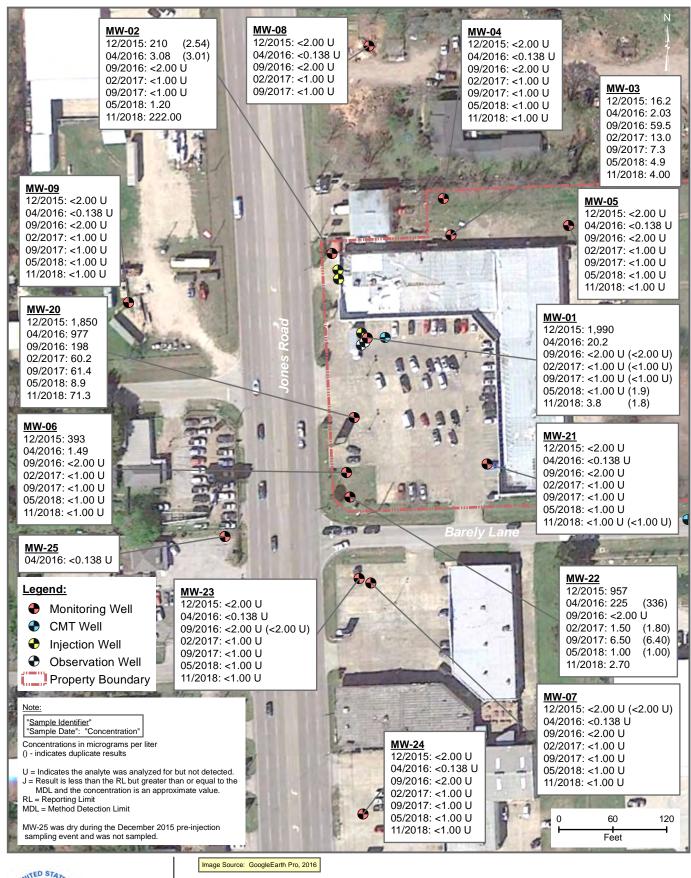




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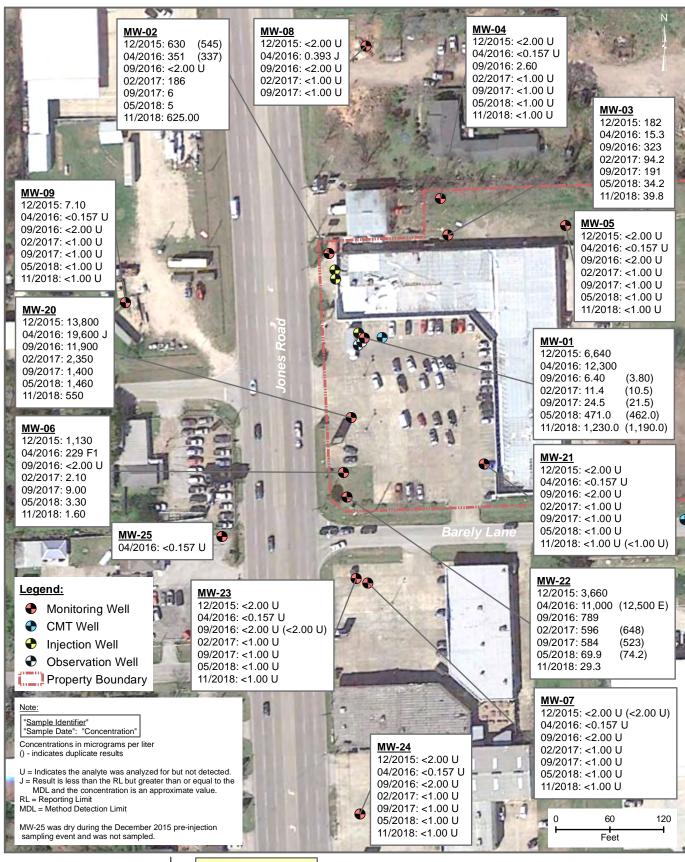
Remedial Action Jones Road Ground Water Plume Houston, Harris County, Texas Figure 2 Tetrachloroethene Results







Remedial Action Jones Road Ground Water Plume Houston, Harris County, Texas Figure 3 Trichloroethene Results



UNITED STATES



Image Source: GoogleEarth Pro, 2016

Remedial Action
Jones Road Ground Water Plume cis-1,2-Dichloroethene Results
Houston, Harris County, Texas

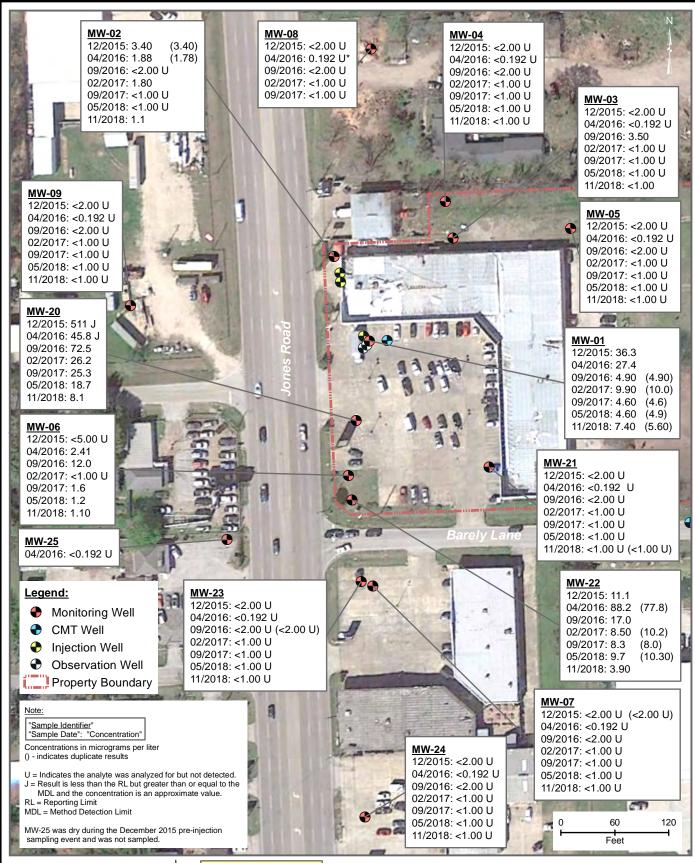
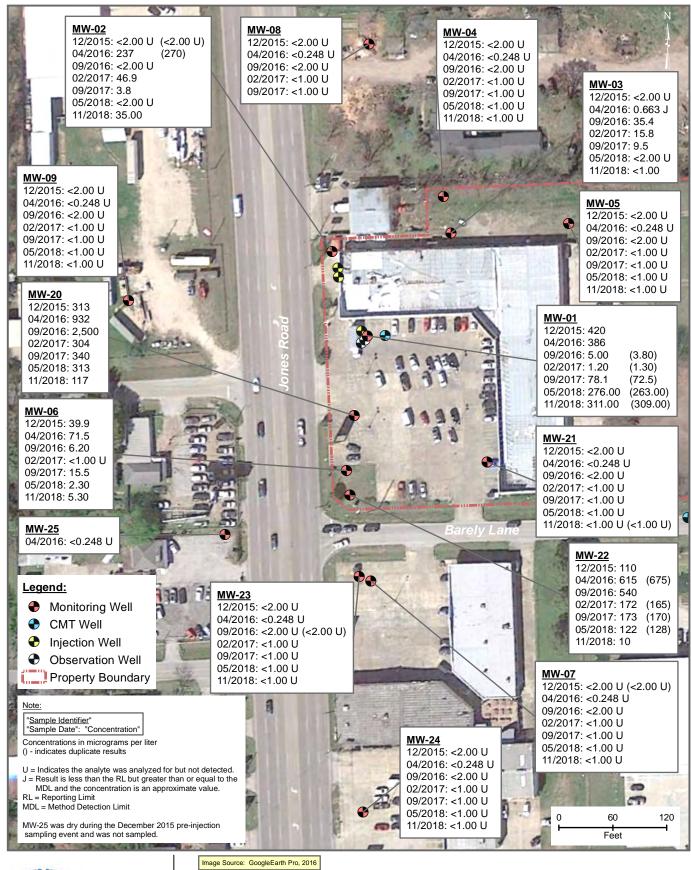






Figure 5 trans-1,2-Dichloroethene Results

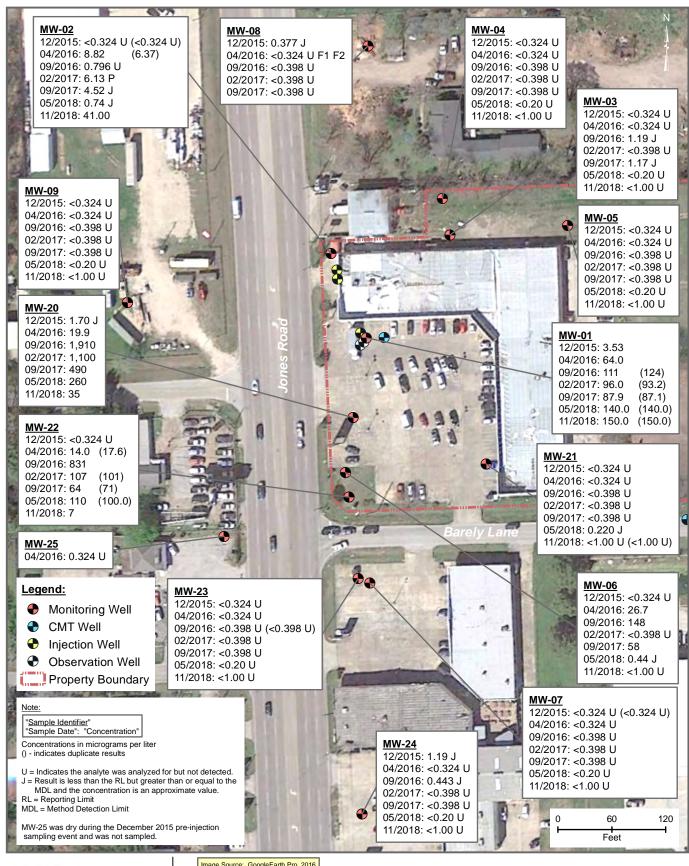
Remedial Action Jones Road Ground Water Plume Houston, Harris County, Texas







Remedial Action Jones Road Ground Water Plume Houston, Harris County, Texas Figure 6 Vinyl Chloride Results

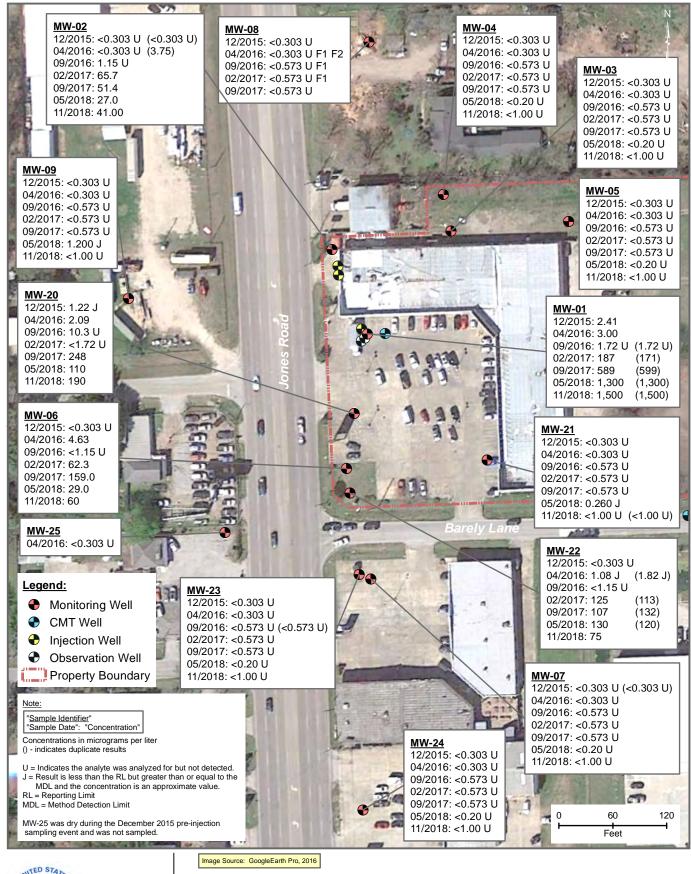






Remedial Action Jones Road Ground Water Plume Houston, Harris County, Texas

Figure 7 **Ethene Results**

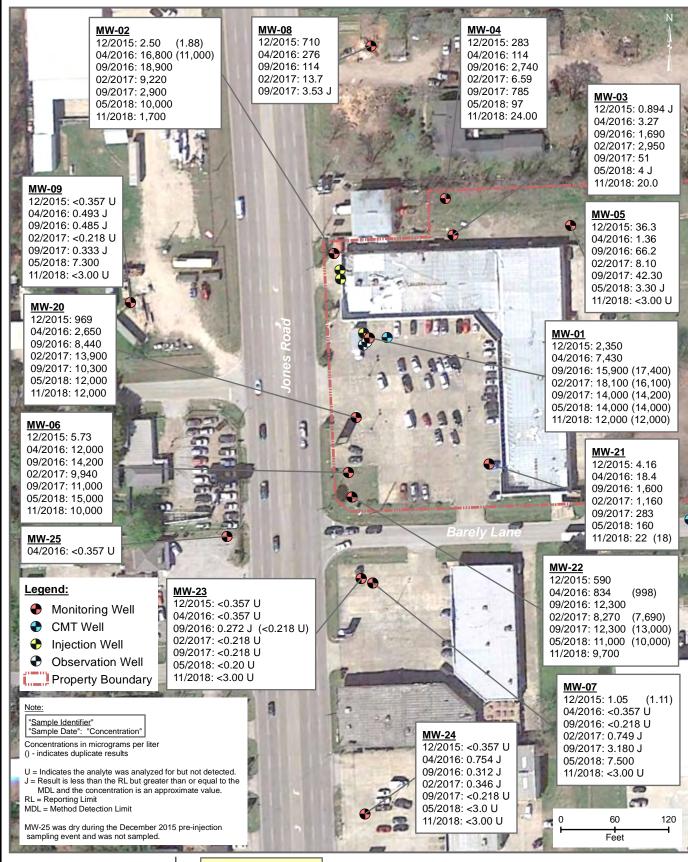


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Remedial Action Jones Road Ground Water Plume Houston, Harris County, Texas Figure 8 Ethane Results

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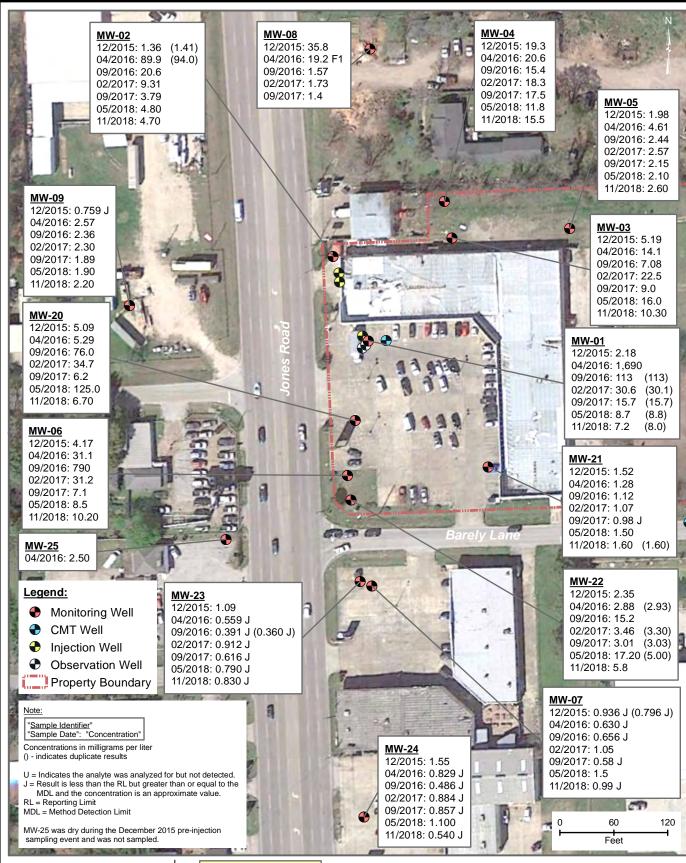
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Image Source: GoogleEarth Pro, 2016

Figure 9 Methane Results

Remedial Action Jones Road Ground Water Plume Houston, Harris County, Texas







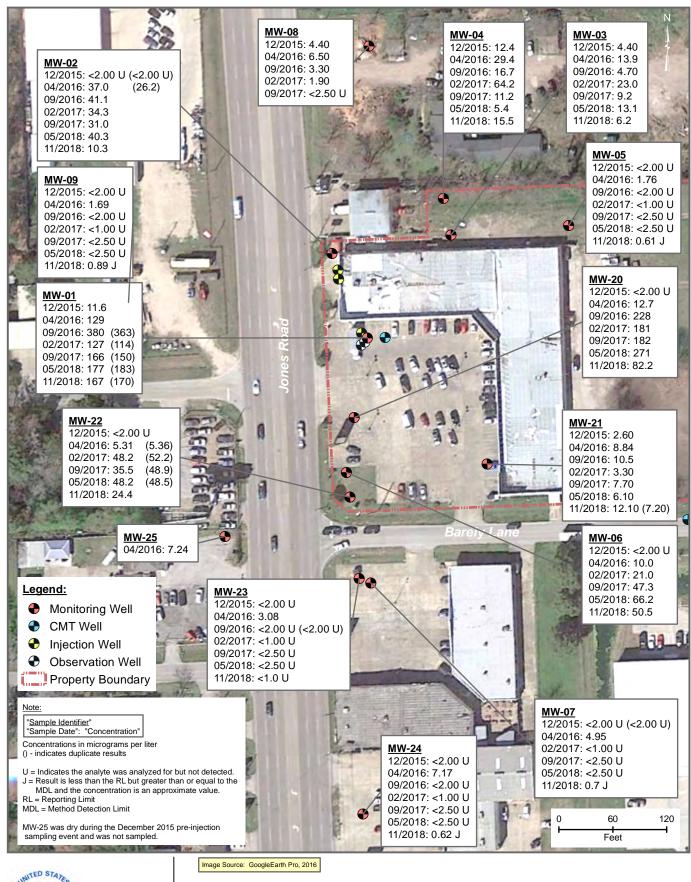
Jones Road Ground Water Plume

Houston, Harris County, Texas

Remedial Action

Figure 10 Total Organic Carbon Results

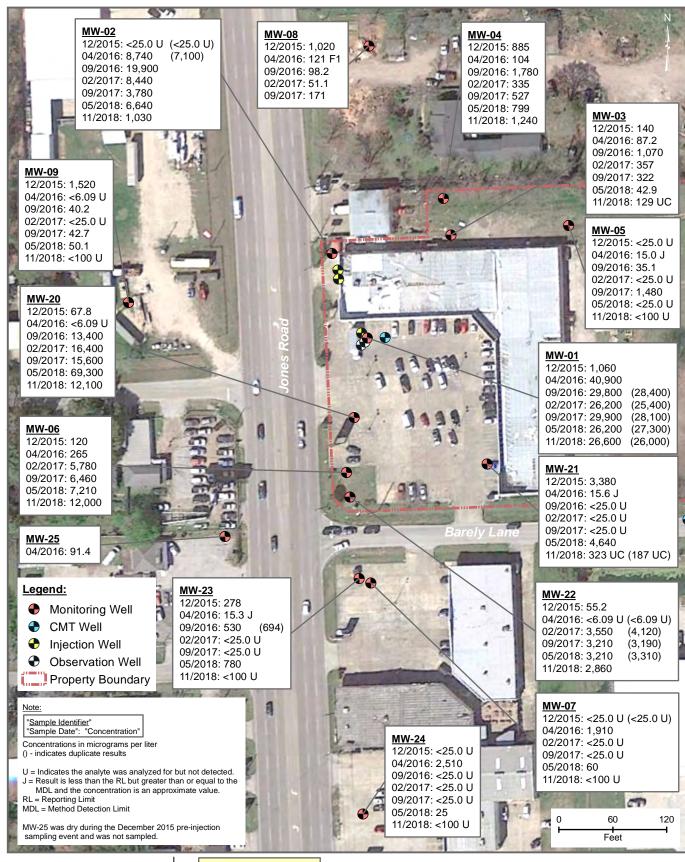
Total Organic Carbon



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Remedial Action Jones Road Ground Water Plume Houston, Harris County, Texas Figure 11 Dissolved Arsenic Results



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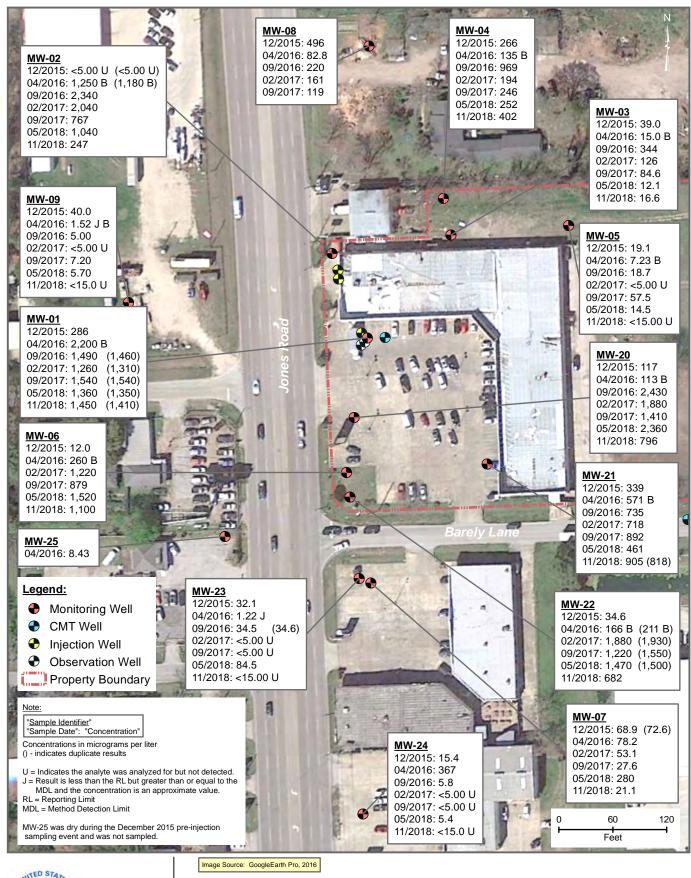
Image Source: GoogleEarth Pro, 2016

Jones Road Ground Water Plume

Houston, Harris County, Texas

Remedial Action

Figure 12 Dissolved Iron Results







Remedial Action Jones Road Ground Water Plume Houston, Harris County, Texas Figure 13 Dissolved Manganese Results

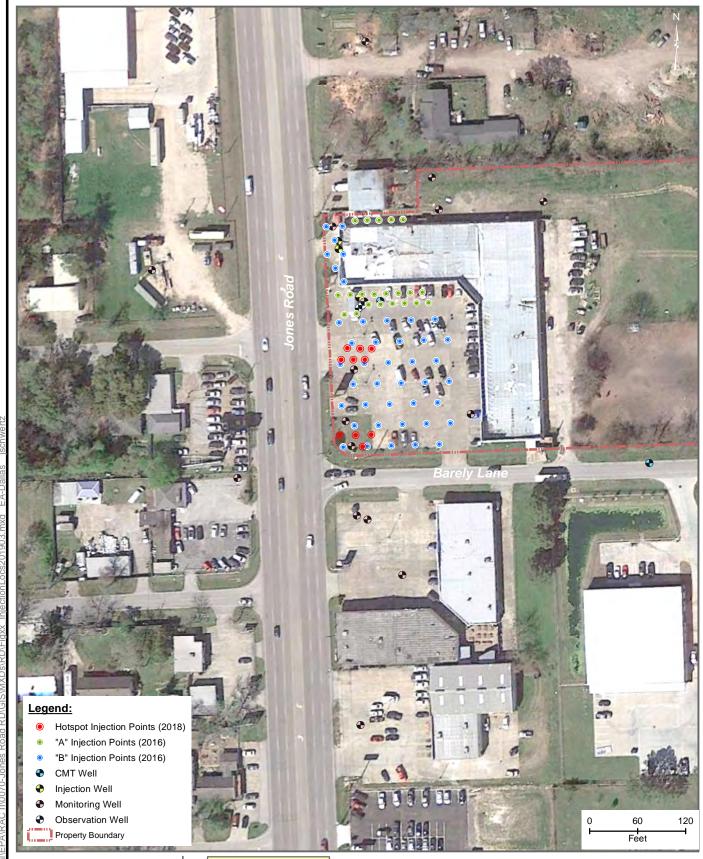


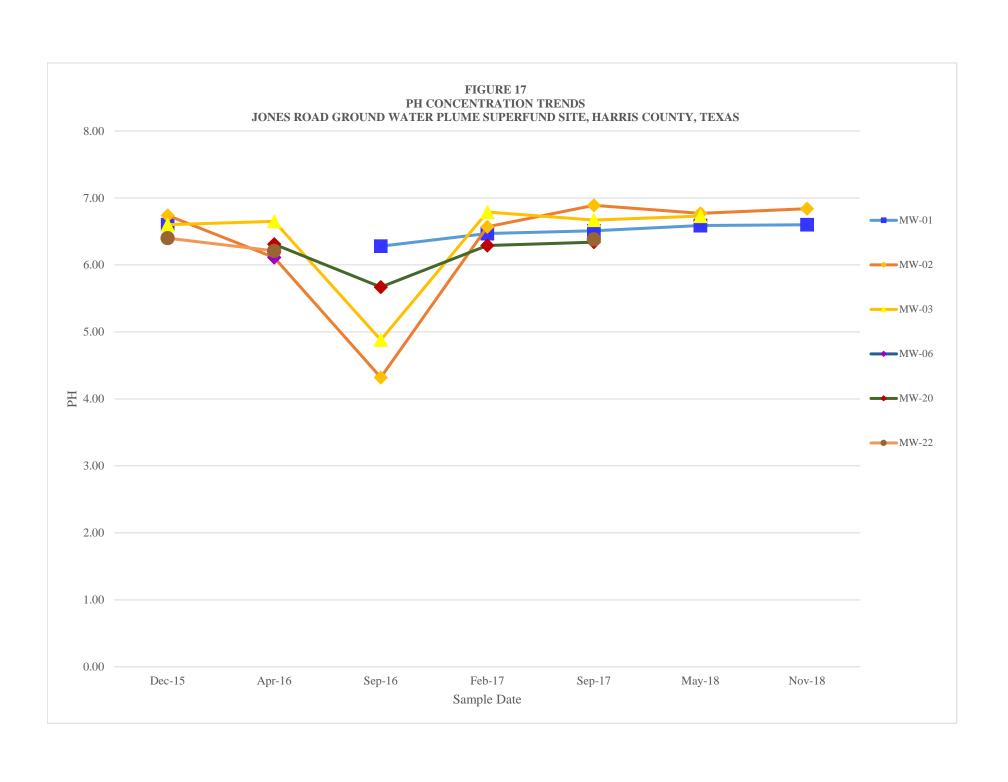


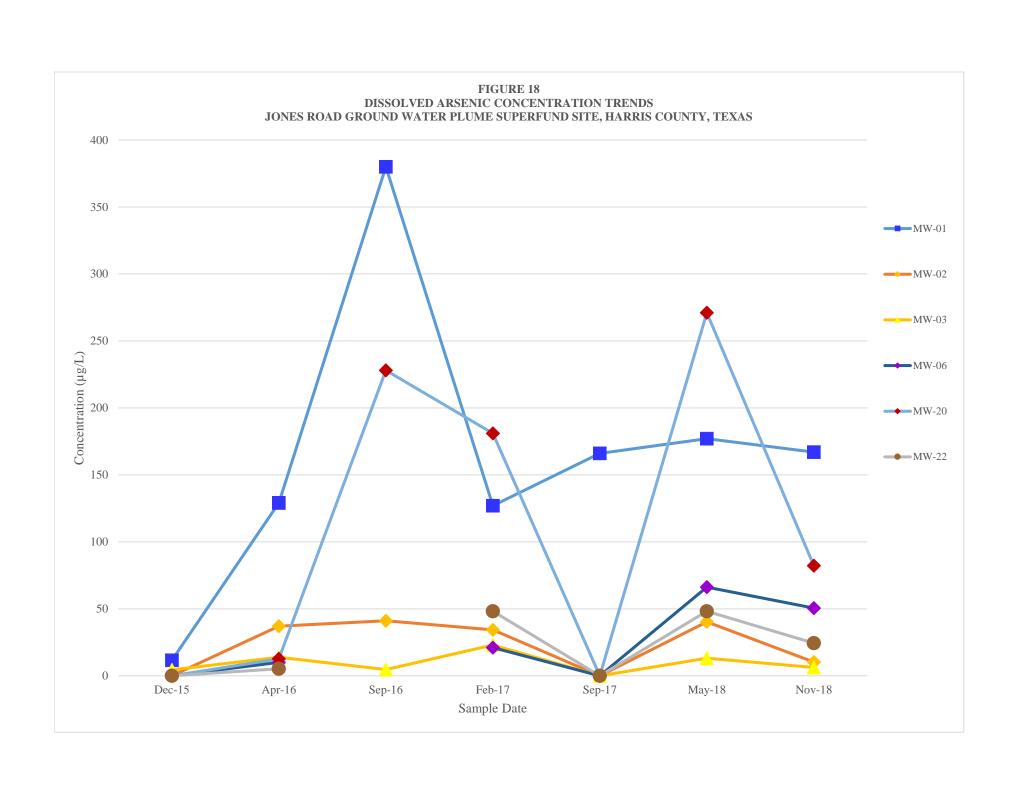


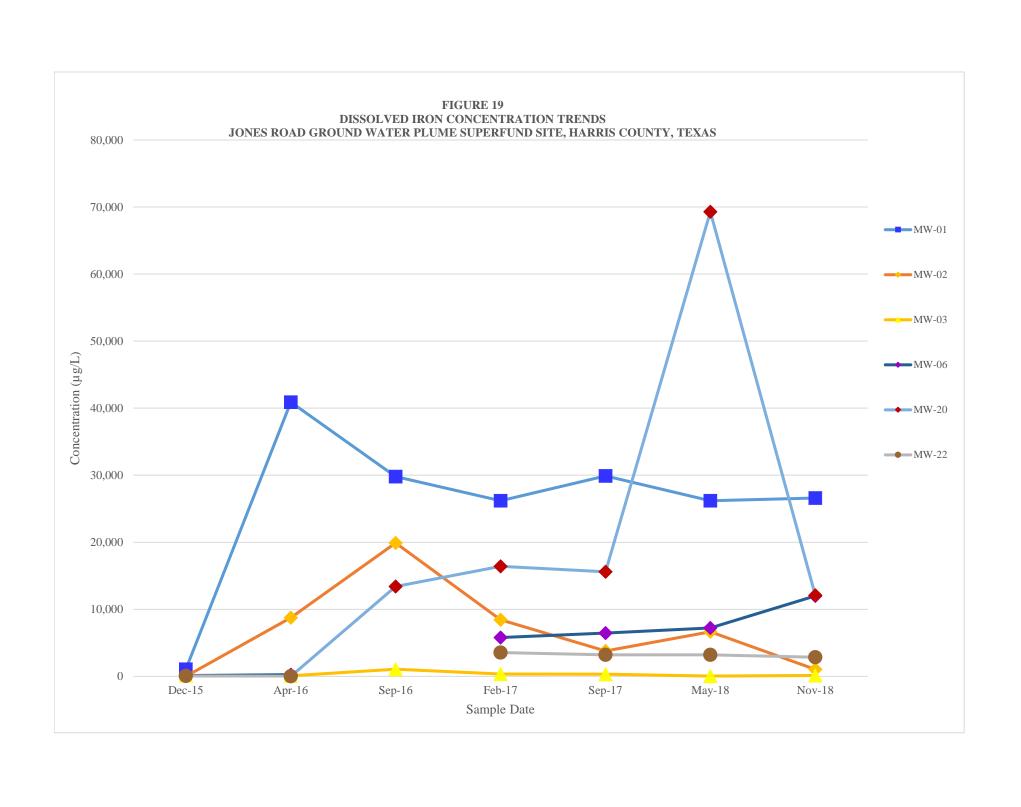
Figure 14 Product Injection Locations

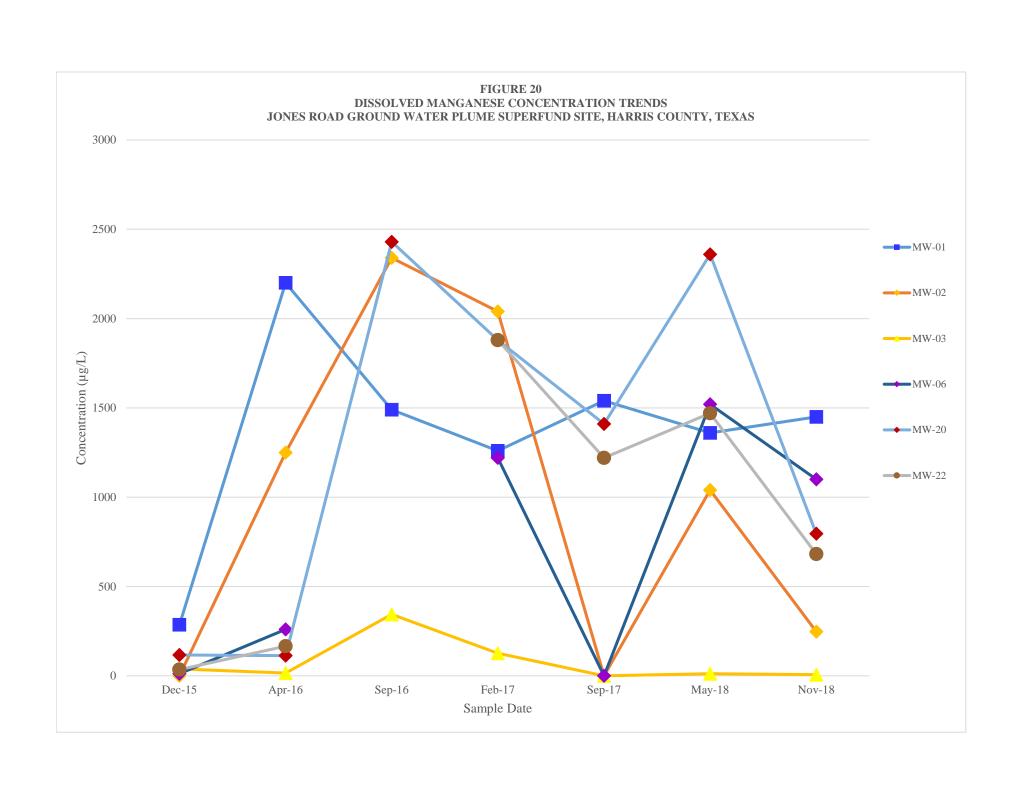


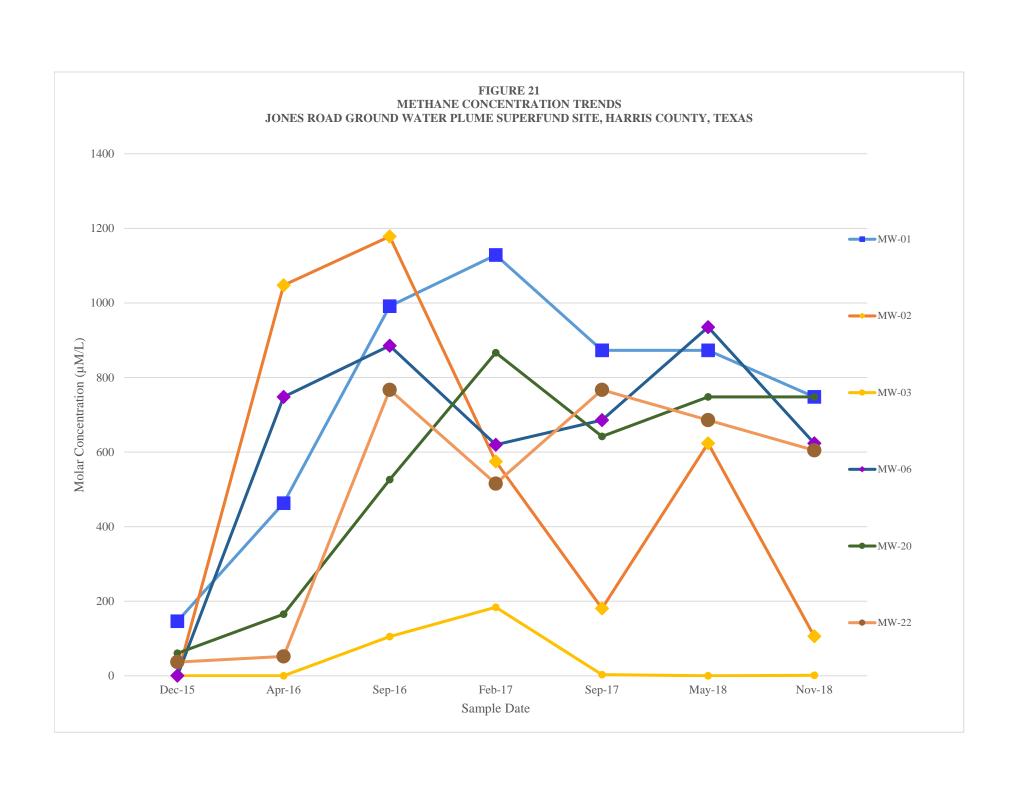


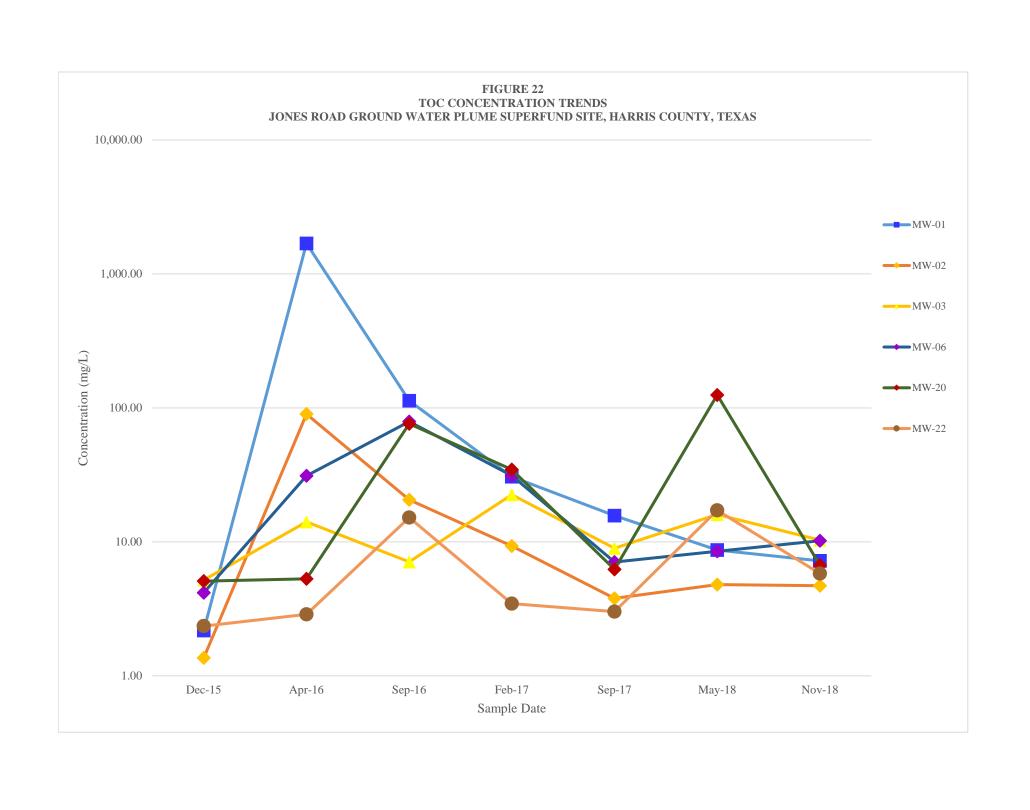


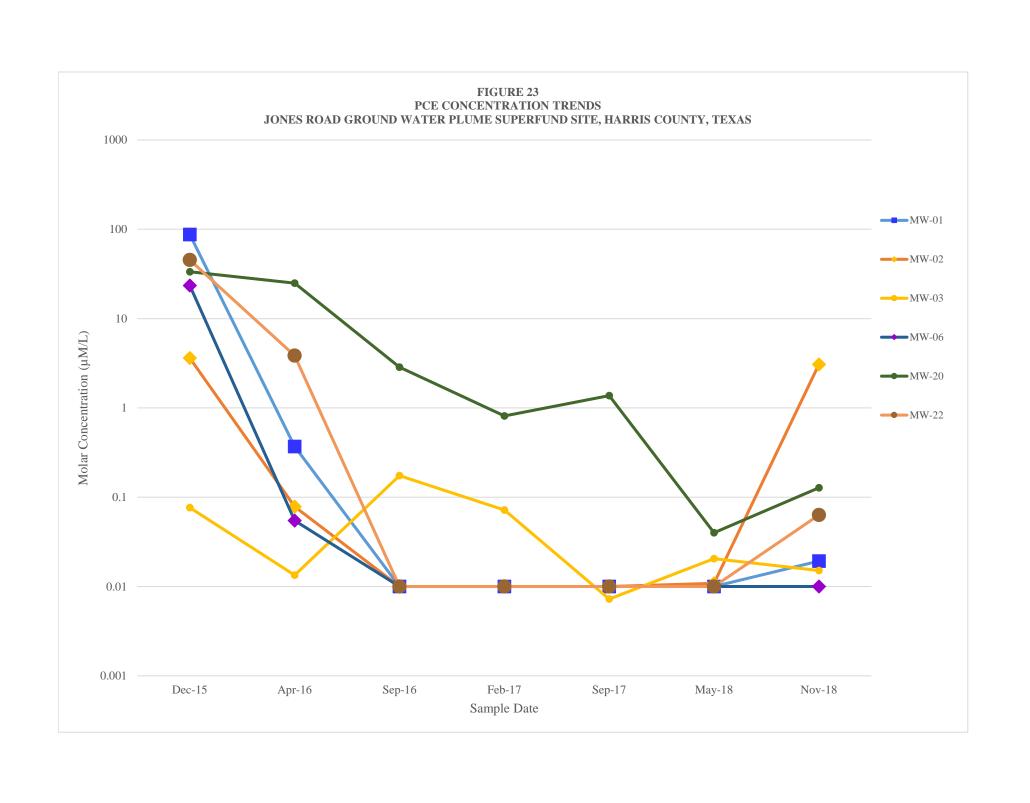


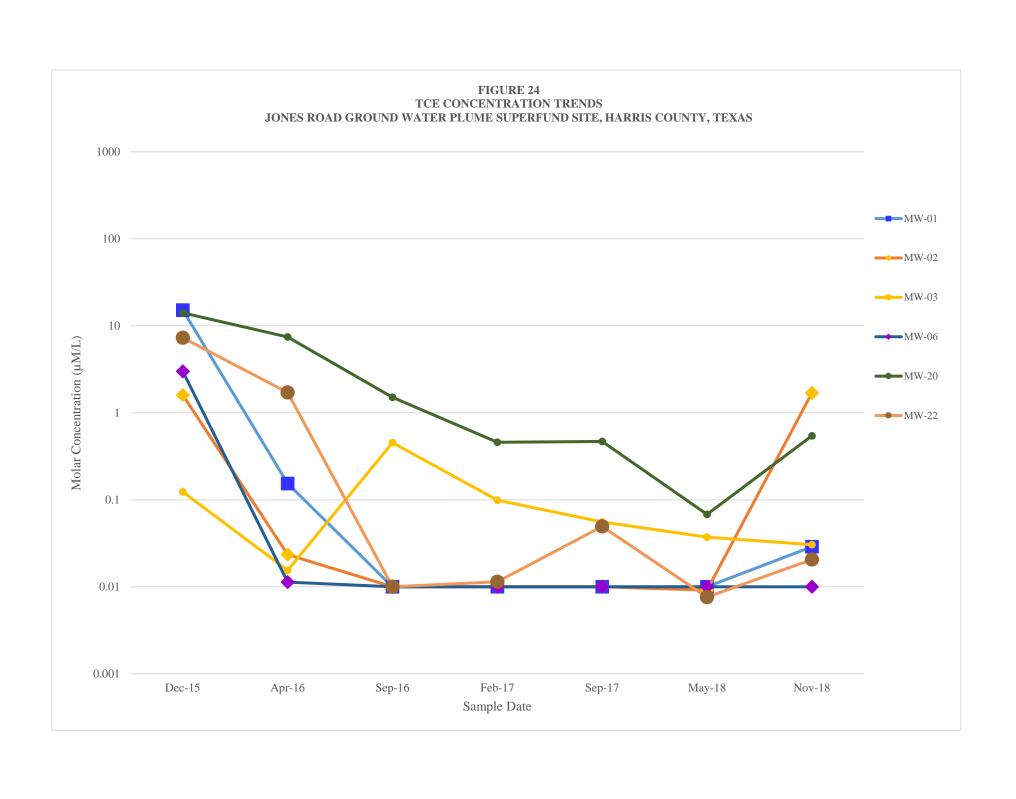


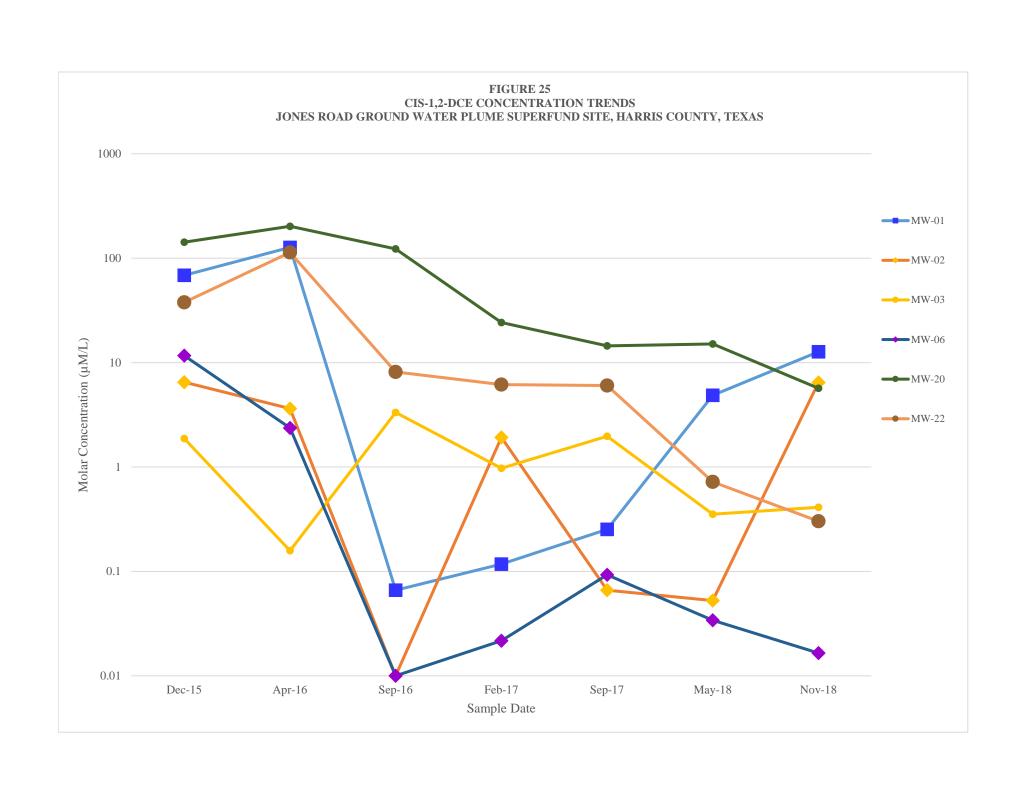


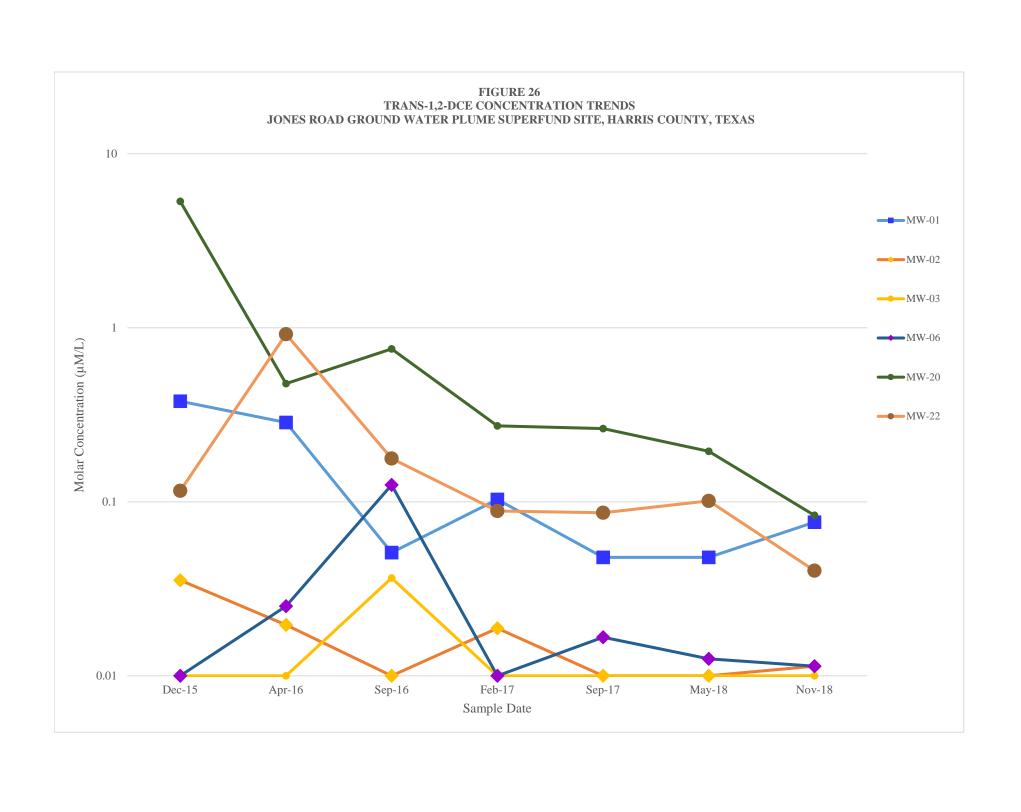


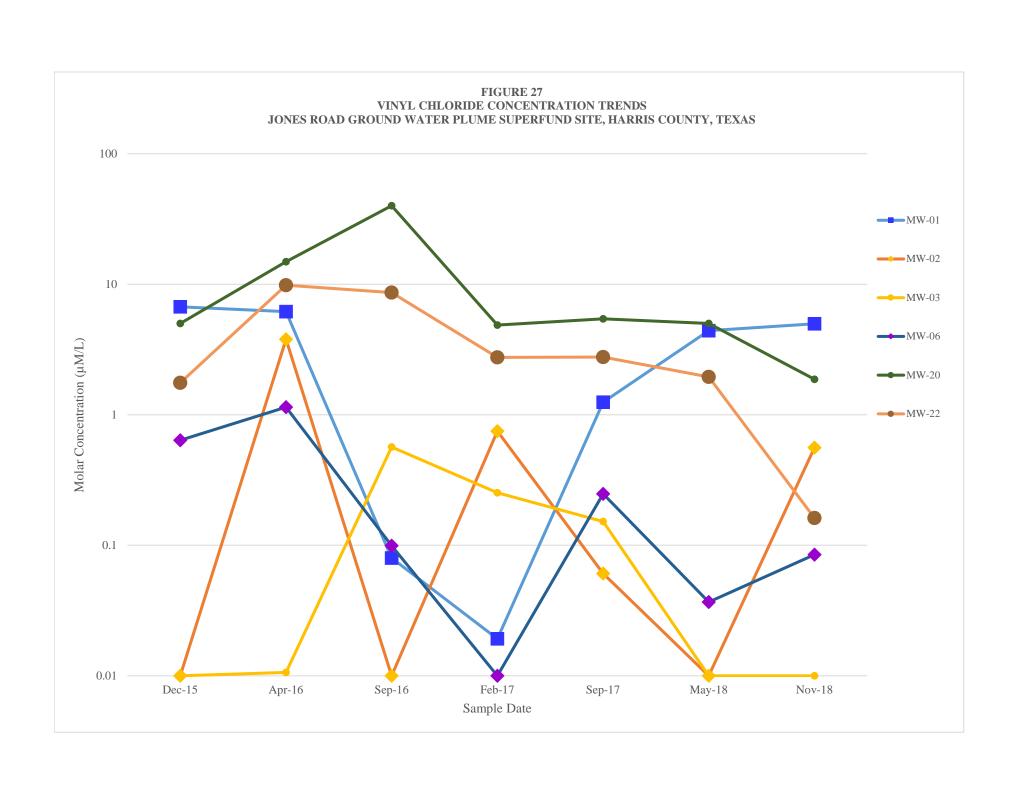


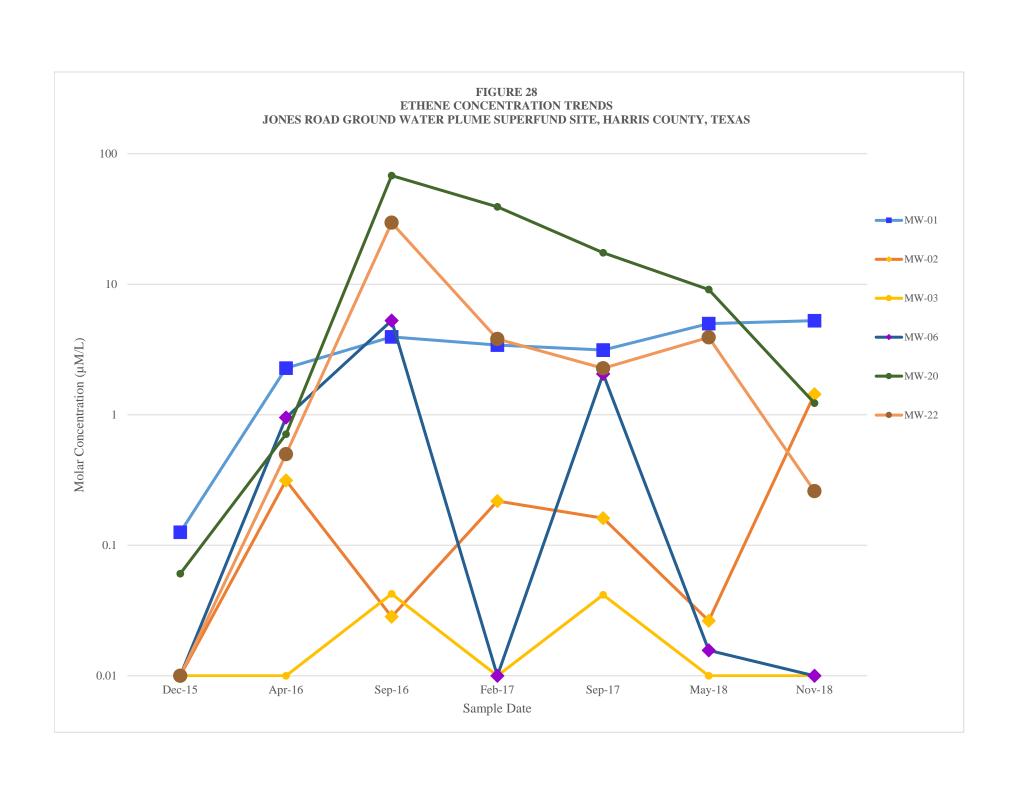


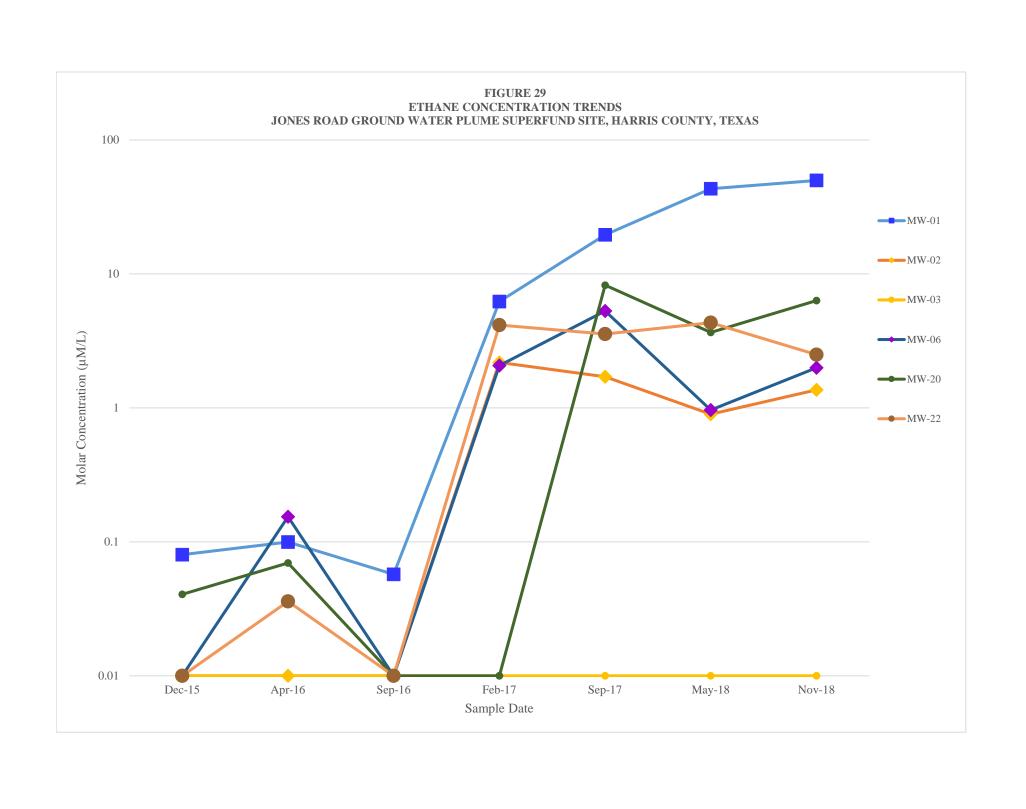


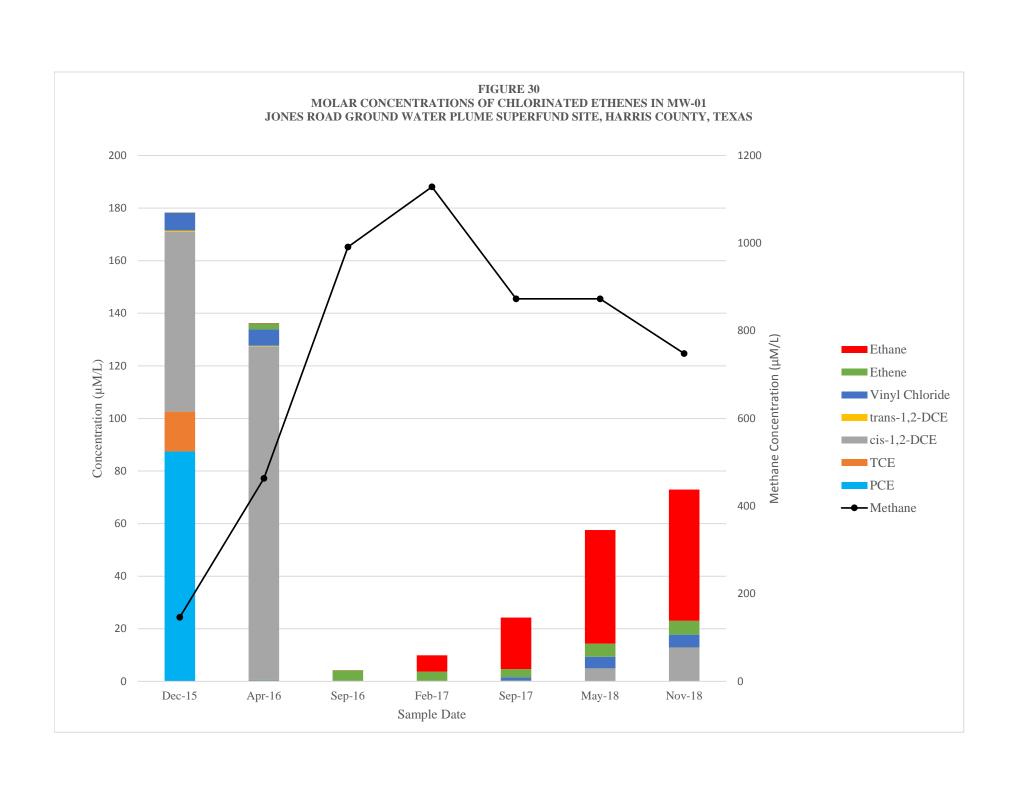


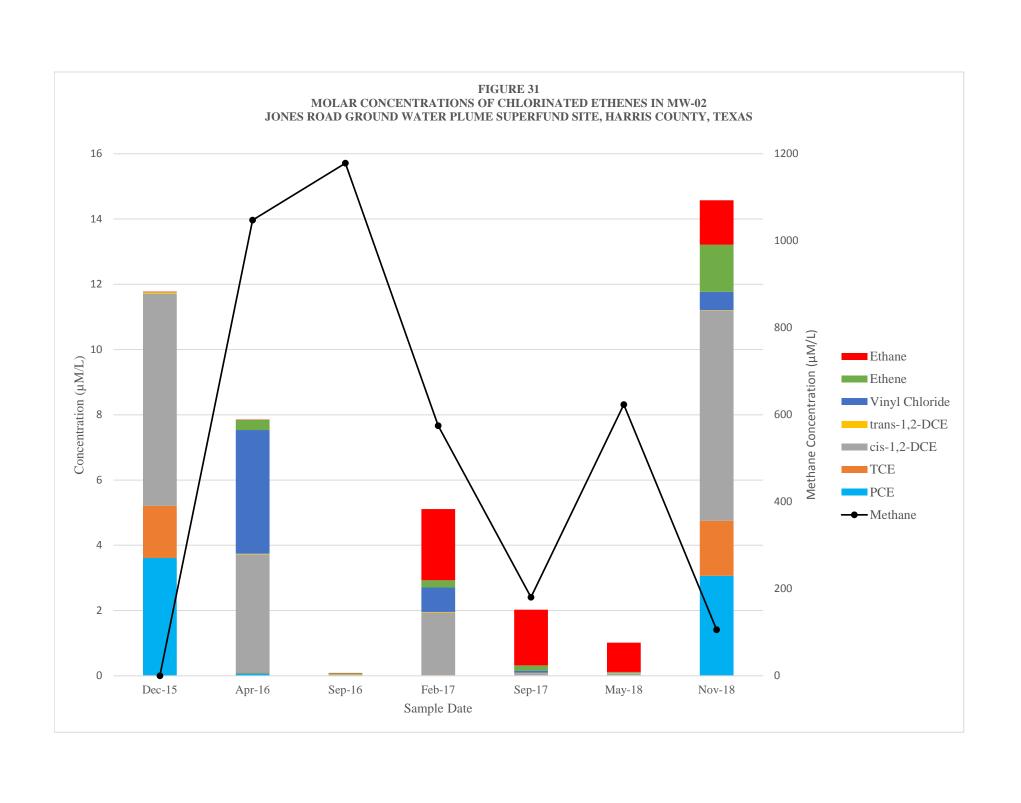


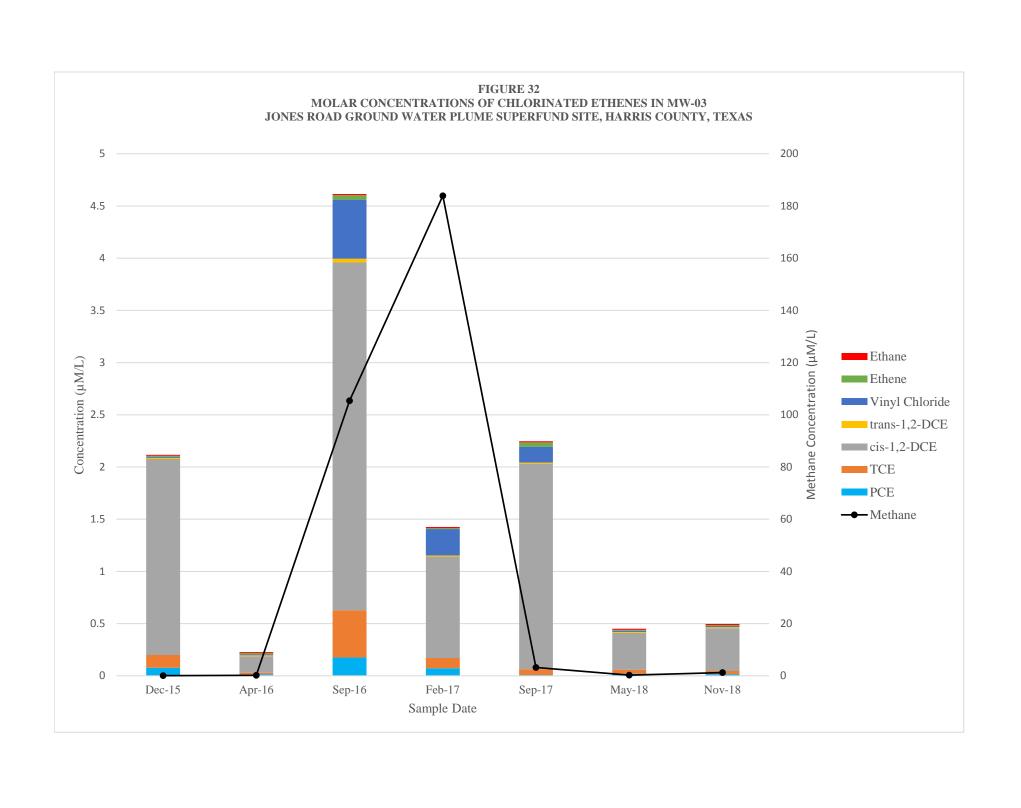


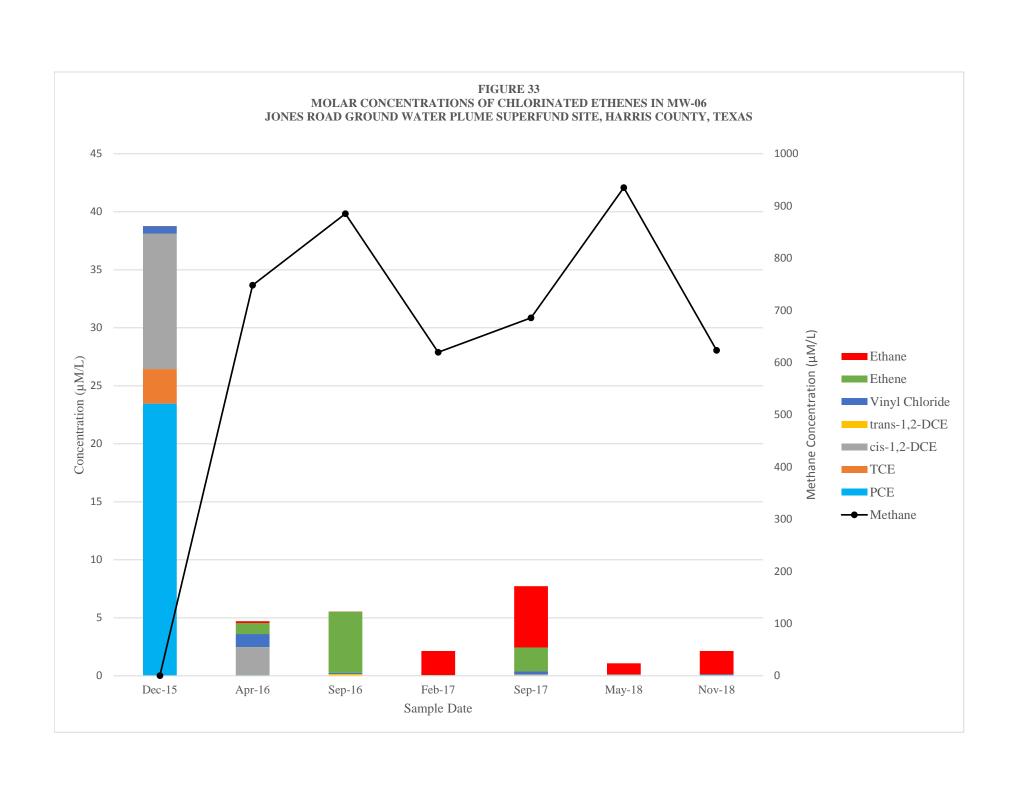


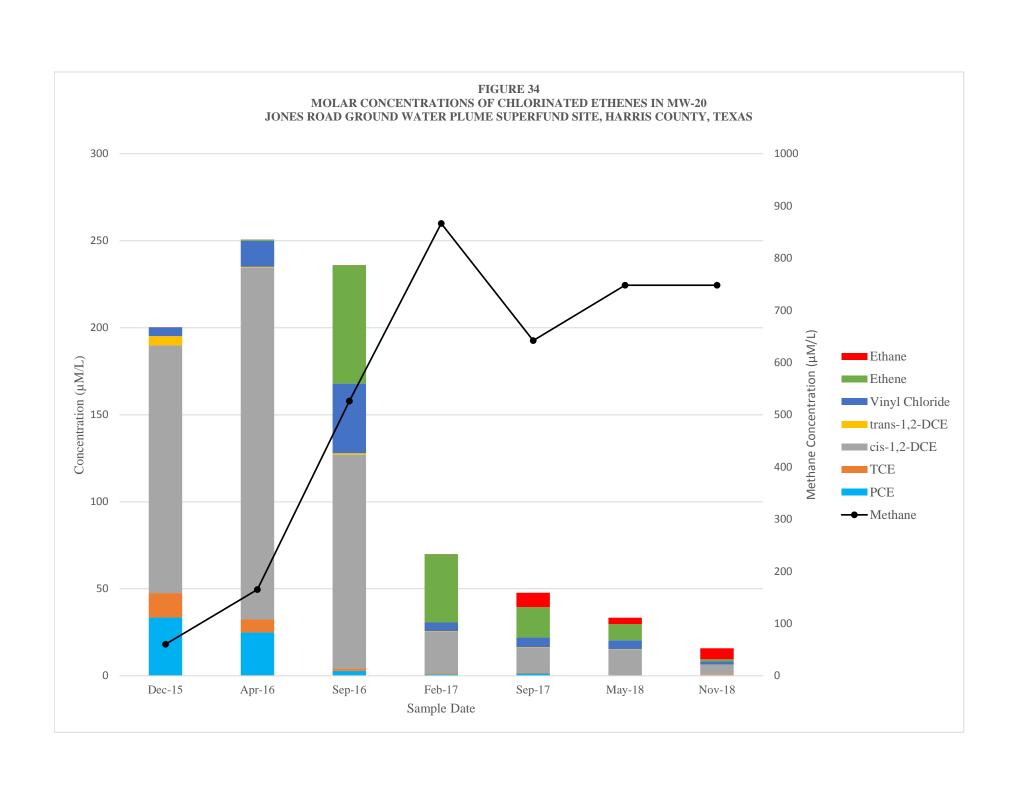












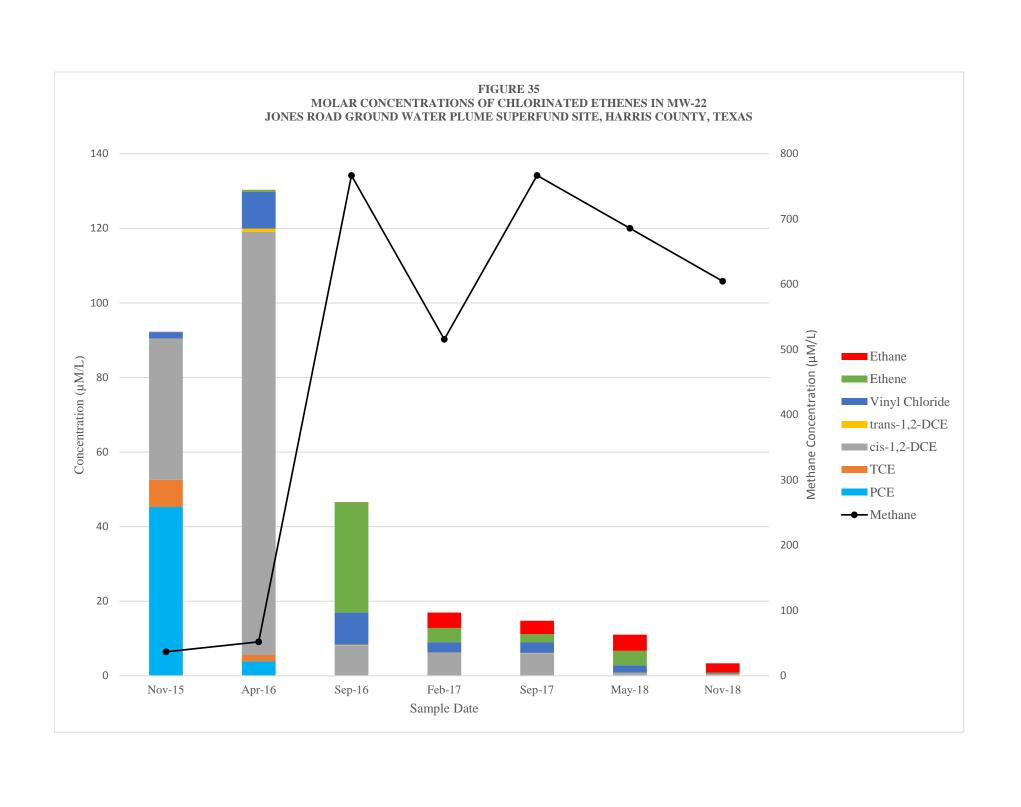




TABLE 1. GAUGING DATA

Wall	Northing	Easting	Top of Casing Elevation (ft amsl)	Total Depth ¹	Screen Interval	Date Gauged	Depth To Water (ft btoc)	Ground Water Elevation (ft amsl)
Well MW-01	13905889.22	3050076.23	124.08	(ft bgs)	(ft bgs)	11/23/2015	25.16	98.92
IVI VV -U I	13903889.22	3030070.23	124.06	33	2.5-55			
						4/19/2016	21.40	102.68
						2/23/2017	22.10	101.98
) (IV) 02	12005002 41	205002655	124.40	2.5	2.5.25	5/31/2017	25.02	99.06
MW-02	13905983.41	3050036.75	124.40	35	2.5-35	11/23/2015	23.21	101.19
						4/19/2016	19.01	105.39
						2/23/2017 5/31/2017	19.13 23.17	105.27 101.23
MW-03	13906003.82	3050169.30	123.83	35	2.5-35	11/23/2015	22.21	101.23
1V1 VV -03	13900003.82	3030109.30	123.63	33	2.5-55	4/19/2016	17.01	101.02
						2/23/2017	17.21	106.62
						5/31/2017	22.26	101.57
MW-04	13906043.95	3050160.69	124.18	35	2-35	11/23/2015	21.39	102.79
	10,000.000	202010000	1210		2 55	4/19/2016	13.10	111.08
						2/23/2017	14.61	111.08
						5/31/2017	21.98	111.08
MW-05	13906012.39	3050268.19	124.58	35	2-35	11/23/2015	22.32	102.26
						4/19/2016	16.80	107.78
						2/23/2017	17.14	107.44
						5/31/2017	22.88	101.70
MW-06	13905739.50	3050053.00	124.09	35	2-35	11/23/2015	34.01	90.08
						4/19/2016	32.27	91.82
						2/23/2017	32.80	91.29
						5/31/2017	34.83	89.26
MW-07	13905616.50	3050080.20	124.16	35	20-35	11/23/2015	28.68	95.48
						4/19/2016	27.45	96.71
						2/23/2017	27.59	96.57
						5/31/2017	29.36	94.80
MW-08	13906214.00	3050078.00	124.82	36.5	20.5-35.5	11/23/2015	20.14	104.68
						4/19/2016	15.25	109.57
						2/23/2017	15.86	108.96
						5/31/2017	20.24	104.58
MW-09	13905928.70	3049810.50	127.23	35	20-35	11/23/2015	27.28	99.95
						4/19/2016	24.40	102.83
						2/23/2017	20.41	106.82
MW-20	13905800.50	3050061.56	124.50	32	25-30	5/31/2017	24.87	102.36
IVI VV -20	13903800.30	3030001.30	124.30	32	23-30	11/23/2015 4/19/2016	27.92 26.5	96.58 98.00
						2/23/2017	25.74	98.00
						5/31/2017	27.71	98.00
MW-21	13905748.87	3050209.53	124.16	32	25.3	11/23/2015	27.61	96.55
1,11, 21	10,007	5050207.55	127.10	52	23.3	4/19/2016	25.38	98.78
						2/23/2017	24.96	98.78
						5/31/2017	27.46	98.78
MW-22	13905712.04	3050057.03	124.73	55	48-53	11/23/2015	49.52	75.21
						4/19/2016	48.19	76.54
						2/23/2017	45.81	78.92
						5/31/2017	48.1	76.63
MW-23	13905621.51	3050066.96	124.60	55	48-53	11/23/2015	46.67	77.93
						4/19/2016	45.31	79.29
						2/23/2017	44.57	79.29
					<u>L</u>	5/31/2017	45.01	79.29
MW-24	13905359.53	3050071.34	124.37	55	48-53	11/23/2015	20.37	104.00
						4/19/2016	16.39	107.98
						2/23/2017	18.18	107.98
						5/31/2017	21.48	107.98
MW-25	13905668.39	3049917.71	124.38	30	23-28	11/23/2015	29.41	94.97
						4/19/2016	28.15	96.23
						2/23/2017	29.45	94.93
NOTES:						5/31/2017	29.43	94.95

NOTES:

amsl = Above mean sea level.

bgs = Below ground surface.

btoc = Below top of casing.

ft = Feet.

¹ Total depth for wells MW-1 through MW-09 is the total depth of the borehole, which may or may not correspond to the total depth of the well. Total depth for all other wells represents total depth of the well.

TABLE 2. GROUND WATER FIELD GEOCHEMISTRY RESULTS

Sample Location/Well ID	Sample Date	рН	DO (m c/L)	ORP	Temperature	Conductivity	-
	3-Dec-15	6.60	(mg/L) 0.60	(mV) 21.6	(°C) 25.5	(μS/cm) 934	(NTU) 58.9
	22-Apr-16				To Take Readings		450
MW-01	20-Sep-16 23-Feb-17	6.28 6.47	1.4 0.28	-119.8 -117.4	26.8 26.8	2,426 1,730	46.0 11.2
1,1,1, 0,1	13-Sep-17	6.51	2.90	-127.4	28.1	2,756	20.6
	24-May-18	6.59	1.05	-141.3	26.1	1,365	3.7
	7-Nov-18 3-Dec-15	6.60	0.23 2.63	-139.0 83.7	25.5 23.7	1,563 878	7.6 104
	22-Apr-16	6.11		-98.2	25.2	680	53.0
MW 02	20-Sep-16	4.32	3.6	-61.0 -99.0	25.7 24.0	1,557	82.6
MW-02	23-Feb-17 13-Sep-17	6.57 6.89	0.24 0.27	-99.0 -99.9	26.0	1,150 1,218	6.2
	23-May-18	6.77	0.93	-192.7	24.7	1,032	22.3
	7-Nov-18 3-Dec-15	6.84	0.35 0.99	-13.6 84.2	23.6 21.2	1,551 1,014	19.9 49.9
	22-Apr-16	6.65	3.82	92.1	22.2	940	62.0
	21-Sep-16	4.88	2.6	193.6	22.6	759	6.4
MW-03	22-Feb-17 12-Sep-17	6.79 6.67	0.14	-37.2 69.0	21.9 25.2	590 1,103	3.3
	22-May-18	6.73	1.71	42.5	23.2	536	32.3
	6-Nov-18	6.64	0.60	-46.1	22.4	918	38.0
	2-Dec-15 21-Apr-16	6.74	0.67	-191.6 -42.0	21.8	1,478 980	74.7 45.2
	22-Sep-16	4.76	1.9	230.5	21.5	1,499	6.2
MW-04	22-Feb-17	6.82	0.16	9.6	22.1 23.9	870	18.7
	12-Sep-17 23-May-18	6.46	0.14 11.10	-79.6 -201.5	22.6	1,586 1,836	19.4 16.2
	6-Nov-18	6.68	0.19	-162.1	21.7	2,436	17.3
	2-Dec-15	6.60	0.72	-95.7	22.7	1,075	148
	21-Apr-16 21-Sep-16	7.20 4.29	2.55	168.4 638.8	22.1	376 1,027	52.3 454
MW-05	22-Feb-17	6.69	2.3	91.9	23.2	900	9.8
	13-Sep-17 21-May-18	6.44	0.9	83.7 -10.8	24.1 24.0	1,936 1,309	79.1 699.0
	5-Nov-18	6.53	1.82	-9.8	21.6	1,309	699.0
	1-Dec-15		N		To Take Readings		
	21-Apr-16 21-Sep-16	6.11	0.33	-0.4	25.4	580	189
MW-06	21-Feb-17						
	11-Sep-17		N	ot Enough Water	To Take Readings		
	22-May-18 6-Nov-18						
	1-Dec-15						
	20-Apr-16						
MW-07	21-Sep-16 20-Feb-17		Casing D	amaged: Could N	Not Accommodate A	Pump	
	11-Sep-17		8	8 ,		1	
	22-May-18 5-Nov-18						
	2-Dec-15	7.07	0.56	-137.5	23.4	494	109
	19-Apr-16	6.71	0.01	6.2	24.0	780	4.0
MW-08	20-Sep-16 21-Feb-17	3.64 6.63	1.6 0.20	622.2 156.3	24.6 23.6	840 850	32.0 7.7
11111 00	13-Sep-17	6.82	0.37	87.1	24.3	1,459	40.4
	24-May-18				woodpile - Inaccessib woodpile - Inaccessib		
	5-Nov-18 2-Dec-15	6.65	1.60	143.6	22.1	712	184
	21-Apr-16	6.70	1.53	196.7	23.0	740	68.7
MW-09	22-Sep-16 23-Feb-17	3.80 6.59	2.5 0.59	599.8 75.4	24.0 22.9	1,156 1,070	66.5 3.8
IVI W -09	12-Sep-17	6.66	0.53	-18.2	27.5	1,674	92.4
	24-May-18	6.59	0.60	9.0	24.1	1,042	56.0
	5-Nov-18 2-Dec-15	6.45	0.29	-92.2	22.6 To Take Readings	1,235	
	22-Apr-16	6.31	0.00	40.8	27.5	1,120	77.6
MW-20	22-Sep-16	5.67	1.4	-8.0	26.9	2,166	278
	21-Feb-17 13-Sep-17	6.29	0.12	-37.9 -70.2	27.2 29.2	1,930 2,989	13.1 68.2
	24-May-18		N	ot Enough Water	To Take Readings		1
	1-Dec-15 22-Apr-16	6.52 6.55	0.80	202.1 193.0	26.2 25.5	1,154 990	9.87
	22-Apr-16 22-Sep-16	6.16	1.2	426.2	25.1	1,052	9.87
MW-21	22-Feb-17	6.65	0.13	49.8 30.1	24.8	1,010	1.4
	13-Sep-17	(20	0.19	20.1	28.6	1,837	12.3
I	_	6.39				1 /	
	23-May-18 7-Nov-18	6.65			To Take Readings 24.76	1111.00	2.16
	23-May-18 7-Nov-18 30-Nov-15	6.65 6.40	0.18 0.77	ot Enough Water -52.60 139.0	To Take Readings 24.76 24.6	1111.00	
	23-May-18 7-Nov-18 30-Nov-15 21-Apr-16	6.65	0.18 0.77 0.04	ot Enough Water -52.60 139.0 -14.7	To Take Readings 24.76 24.6 25.9	1111.00	2.16 158
MW-22	23-May-18 7-Nov-18 30-Nov-15 21-Apr-16 21-Sep-16 21-Feb-17	6.65 6.40 6.21	0.18 0.77 0.04	ot Enough Water -52.60 139.0 -14.7 Bailer was used t	To Take Readings 24.76 24.6 25.9 to collect sample.	1111.00 1,091 1,180	158
MW-22	23-May-18 7-Nov-18 30-Nov-15 21-Apr-16 21-Sep-16 21-Feb-17 12-Sep-17	6.65 6.40	0.18 0.77 0.04	ot Enough Water -52.60 139.0 -14.7 Bailer was used t -20.80	24.76 24.6 25.9 26.60	1111.00	
MW-22	23-May-18 7-Nov-18 30-Nov-15 21-Apr-16 21-Sep-16 21-Feb-17	6.65 6.40 6.21	0.18 0.77 0.04	ot Enough Water -52.60 139.0 -14.7 Bailer was used t -20.80	To Take Readings 24.76 24.6 25.9 to collect sample.	1111.00 1,091 1,180	158
MW-22	23-May-18 7-Nov-18 30-Nov-15 21-Apr-16 21-Sep-16 21-Feb-17 12-Sep-17 22-May-18 1-Dec-15 20-Apr-16	6.65 6.40 6.21 6.38 6.79 6.93	N 0.18 0.77 0.04 3.50 N 1.29 0.38	ot Enough Water -52.60 139.0 -14.7 Bailer was used t -20.80 ot Enough Water -1,860.7 144.0	To Take Readings 24.76 24.6 25.9 to collect sample. 26.60 To Take Readings 23.2 25.6	1111.00 1,091 1,180 2787.00 634 630	76.71 158
	23-May-18 7-Nov-18 30-Nov-15 21-Apr-16 21-Sep-16 21-Feb-17 12-Sep-17 22-May-18 1-Dec-15 20-Apr-16 21-Sep-16	6.65 6.40 6.21 6.38 6.79 6.93 4.67	N 0.18 0.77 0.04 3.50 N 1.29 0.38 1.9	ot Enough Water -52.60 139.0 -14.7 Bailer was used t -20.80 ot Enough Water -1,860.7 144.0 616.8	24.76 24.6 25.9 26.60 To Take Readings 23.2 25.6 25.3	1111.00 1,091 1,180 2787.00 634 630 680	76.71 158 76.71 158
MW-22 MW-23	23-May-18 7-Nov-18 30-Nov-15 21-Apr-16 21-Sep-16 21-Feb-17 12-Sep-17 22-May-18 1-Dec-15 20-Apr-16	6.65 6.40 6.21 6.38 6.79 6.93	N 0.18 0.77 0.04 3.50 N 1.29 0.38	ot Enough Water -52.60 139.0 -14.7 Bailer was used t -20.80 ot Enough Water -1,860.7 144.0	To Take Readings 24.76 24.6 25.9 to collect sample. 26.60 To Take Readings 23.2 25.6	1111.00 1,091 1,180 2787.00 634 630	76.71 158
	23-May-18 7-Nov-18 30-Nov-15 21-Apr-16 21-Sep-16 21-Feb-17 12-Sep-17 22-May-18 1-Dec-15 20-Apr-16 21-Sep-16 20-Feb-17 12-Sep-17 21-May-18	6.65 6.40 6.21 6.38 6.79 6.93 4.67 6.94 7.04 6.78	N 0.18 0.77 0.04 3.50 N 1.29 0.38 1.9 0.48 0.70 0.76	ot Enough Water -52.60 139.0 -14.7 Bailer was used t -20.80 ot Enough Water -1,860.7 144.0 616.8 12.9 28.5 -15.8	24.76 24.6 25.9 co collect sample. 26.60 To Take Readings 23.2 25.6 25.3 24.2 26.0 27.7	1111.00 1,091 1,180 2787.00 634 630 680 680 1,194 686	76.71 158 76.71 158 182 20.4 678.0 95.0
	23-May-18 7-Nov-18 30-Nov-15 21-Apr-16 21-Sep-16 21-Feb-17 12-Sep-17 22-May-18 1-Dec-15 20-Apr-16 21-Sep-16 20-Feb-17 12-Sep-17 21-May-18 5-Nov-18	6.65 6.40 6.21 6.38 6.79 6.93 4.67 6.94 7.04 6.78 6.91	N 0.18 0.77 0.04 3.50 N 1.29 0.38 1.9 0.48 0.70 0.76 0.64	ot Enough Water -52.60 139.0 -14.7 Bailer was used t -20.80 ot Enough Water -1,860.7 144.0 616.8 12.9 28.5 -15.8 -54.5	To Take Readings 24.76 24.6 25.9 to collect sample. 26.60 To Take Readings 23.2 25.6 25.3 24.2 26.0 27.7 24.8	1111.00 1,091 1,180 2787.00 634 630 680 680 1,194 686 817	76.71 158 76.71 158 182 20.4 678.0 95.0
	23-May-18 7-Nov-18 30-Nov-15 21-Apr-16 21-Sep-16 21-Feb-17 12-Sep-17 22-May-18 1-Dec-15 20-Apr-16 21-Sep-16 20-Feb-17 12-Sep-17 21-May-18 5-Nov-18 1-Dec-15 20-Apr-16	6.65 6.40 6.21 6.38 6.79 6.93 4.67 6.94 7.04 6.78	N 0.18 0.77 0.04 3.50 N 1.29 0.38 1.9 0.48 0.70 0.76	ot Enough Water -52.60 139.0 -14.7 Bailer was used t -20.80 ot Enough Water -1,860.7 144.0 616.8 12.9 28.5 -15.8	24.76 24.6 25.9 co collect sample. 26.60 To Take Readings 23.2 25.6 25.3 24.2 26.0 27.7	1111.00 1,091 1,180 2787.00 634 630 680 680 1,194 686	76.71 158 76.71 158 182 20.4 678.0 95.0
MW-23	23-May-18 7-Nov-18 30-Nov-15 21-Apr-16 21-Sep-16 21-Feb-17 12-Sep-17 22-May-18 1-Dec-15 20-Apr-16 21-Sep-16 20-Feb-17 12-Sep-17 21-May-18 5-Nov-18 1-Dec-15 20-Apr-16 21-Sep-16	6.65 6.40 6.21 6.38 6.79 6.93 4.67 6.94 7.04 6.78 6.91 7.19 7.04 4.82	N 0.18 0.77 0.04 3.50 N 1.29 0.38 1.9 0.48 0.70 0.76 0.64 1.03 0.20 2.1	ot Enough Water -52.60 139.0 -14.7 Bailer was used t -20.80 ot Enough Water -1,860.7 144.0 616.8 12.9 28.5 -15.8 -54.5 214.6 137.9 644.3	To Take Readings 24.76 24.6 25.9 To collect sample. 26.60 To Take Readings 23.2 25.6 25.3 24.2 26.0 27.7 24.8 23.3 24.3 25.3	1111.00 1,091 1,180 2787.00 634 630 680 680 1,194 686 817 521 540 559	76.71 158 76.71 158 182 20.4 678.0 95.0 33.8 79.4 52.6
	23-May-18 7-Nov-18 30-Nov-15 21-Apr-16 21-Sep-16 21-Feb-17 12-Sep-17 22-May-18 1-Dec-15 20-Apr-16 21-Sep-16 20-Feb-17 12-Sep-17 21-May-18 5-Nov-18 1-Dec-15 20-Apr-16 21-Sep-16 21-Feb-17	6.65 6.40 6.21 6.38 6.79 6.93 4.67 6.94 7.04 6.78 6.91 7.19 7.04 4.82 7.04	N 0.18 0.77 0.04 3.50 N 1.29 0.38 1.9 0.48 0.70 0.76 0.64 1.03 0.20 2.1 0.83	ot Enough Water -52.60 139.0 -14.7 Bailer was used t -20.80 ot Enough Water -1,860.7 144.0 616.8 12.9 28.5 -15.8 -54.5 214.6 137.9 644.3 131.5	To Take Readings 24.76 24.6 25.9 To collect sample. 26.60 To Take Readings 23.2 25.6 25.3 24.2 26.0 27.7 24.8 23.3 24.3 25.3 25.3	1111.00 1,091 1,180 2787.00 2787.00 634 630 680 680 1,194 686 817 521 540 559 570	76.71 158 76.71 158 182 20.4 678.0 95.0 33.8 79.4 52.6 14.3
MW-23	23-May-18 7-Nov-18 30-Nov-15 21-Apr-16 21-Sep-16 21-Feb-17 12-Sep-17 22-May-18 1-Dec-15 20-Apr-16 21-Sep-16 20-Feb-17 12-Sep-17 21-May-18 5-Nov-18 1-Dec-15 20-Apr-16 21-Sep-16	6.65 6.40 6.21 6.38 6.79 6.93 4.67 6.94 7.04 6.78 6.91 7.19 7.04 4.82	N 0.18 0.77 0.04 3.50 N 1.29 0.38 1.9 0.48 0.70 0.76 0.64 1.03 0.20 2.1	ot Enough Water -52.60 139.0 -14.7 Bailer was used t -20.80 ot Enough Water -1,860.7 144.0 616.8 12.9 28.5 -15.8 -54.5 214.6 137.9 644.3	To Take Readings 24.76 24.6 25.9 To collect sample. 26.60 To Take Readings 23.2 25.6 25.3 24.2 26.0 27.7 24.8 23.3 24.3 25.3	1111.00 1,091 1,180 2787.00 634 630 680 680 1,194 686 817 521 540 559	76.71 158 76.71 158 182 20.4 678.0 95.0 33.8 79.4 52.6
MW-23	23-May-18 7-Nov-18 30-Nov-15 21-Apr-16 21-Sep-16 21-Feb-17 12-Sep-17 22-May-18 1-Dec-15 20-Apr-16 21-Sep-16 20-Feb-17 12-Sep-17 21-May-18 5-Nov-18 1-Dec-15 20-Apr-16 21-Sep-16 21-Sep-17 21-May-18 5-Nov-18 1-Dec-15 20-Apr-16 21-Sep-17 21-May-18 7-Nov-18	6.65 6.40 6.21 6.38 6.79 6.93 4.67 6.94 7.04 6.78 6.91 7.19 7.04 4.82 7.04 7.32	N 0.18 0.77 0.04 3.50 N 1.29 0.38 1.9 0.48 0.70 0.76 0.64 1.03 0.20 2.1 0.83 0.59	ot Enough Water -52.60 139.0 -14.7 Bailer was used t -20.80 ot Enough Water -1,860.7 144.0 616.8 12.9 28.5 -15.8 -54.5 214.6 137.9 644.3 131.5 10.0	To Take Readings 24.76 24.6 25.9 To collect sample. 26.60 To Take Readings 23.2 25.6 25.3 24.2 26.0 27.7 24.8 23.3 24.3 25.3 25.1 25.8	1111.00 1,091 1,180 2787.00 634 630 680 680 1,194 686 817 521 540 559 570 933	76.71 158 76.71 158 182 20.4 678.0 95.0 33.8 79.4 52.6 14.3 27.2
MW-23	23-May-18 7-Nov-18 30-Nov-15 21-Apr-16 21-Sep-16 21-Feb-17 12-Sep-17 22-May-18 1-Dec-15 20-Apr-16 21-Sep-16 20-Feb-17 12-Sep-17 21-May-18 5-Nov-18 1-Dec-15 20-Apr-16 21-Sep-16 21-Sep-17 21-May-18 5-Nov-18 1-Dec-15 20-Apr-16 21-Sep-17	6.65 6.40 6.21 6.38 6.79 6.93 4.67 6.94 7.04 6.78 6.91 7.19 7.04 4.82 7.04 7.32 7.00	N 0.18 0.77 0.04 0.04 3.50 N 1.29 0.38 0.70 0.76 0.64 1.03 0.20 2.1 0.83 0.59 0.87 0.38	ot Enough Water -52.60 139.0 -14.7 Bailer was used t -20.80 ot Enough Water -1,860.7 144.0 616.8 12.9 28.5 -15.8 -54.5 214.6 137.9 644.3 131.5 10.0 -48.6 -91.3	To Take Readings 24.76 24.6 25.9 To collect sample. 26.60 To Take Readings 23.2 25.6 25.3 24.2 26.0 27.7 24.8 23.3 24.3 25.3 25.1 25.8 25.4 24.6	1111.00 1,091 1,180 2787.00 2787.00 634 630 680 680 1,194 686 817 521 540 559 570 933 598	76.71 158 76.71 158 182 20.4 678.0 95.0 33.8 79.4 52.6 14.3 27.2 36.8
MW-23	23-May-18 7-Nov-18 30-Nov-15 21-Apr-16 21-Sep-16 21-Feb-17 12-Sep-17 22-May-18 1-Dec-15 20-Apr-16 21-Sep-17 12-Sep-17 21-May-18 5-Nov-18 1-Dec-15 20-Apr-16 21-Sep-16 21-Sep-17 21-May-18 5-Nov-18 1-Dec-15 20-Apr-16 21-Sep-17 12-Sep-17 12-Sep-17 12-Sep-17	6.65 6.40 6.21 6.38 6.79 6.93 4.67 6.94 7.04 6.78 6.91 7.19 7.04 4.82 7.04 7.32 7.00	N 0.18 0.77 0.04 0.04 3.50 N 1.29 0.38 0.70 0.76 0.64 1.03 0.20 2.1 0.83 0.59 0.87 0.38	ot Enough Water -52.60 139.0 -14.7 Bailer was used t -20.80 ot Enough Water -1,860.7 144.0 616.8 12.9 28.5 -15.8 -54.5 214.6 137.9 644.3 131.5 10.0 -48.6 -91.3	To Take Readings 24.76 24.6 25.9 To collect sample. 26.60 To Take Readings 23.2 25.6 25.3 24.2 26.0 27.7 24.8 23.3 24.3 25.3 25.1 25.8 25.4	1111.00 1,091 1,180 2787.00 2787.00 634 630 680 680 1,194 686 817 521 540 559 570 933 598	76.71 158 76.71 158 182 20.4 678.0 95.0 33.8 79.4 52.6 14.3 27.2 36.8
MW-23 MW-24	23-May-18 7-Nov-18 30-Nov-15 21-Apr-16 21-Sep-16 21-Feb-17 12-Sep-17 22-May-18 1-Dec-15 20-Apr-16 20-Feb-17 12-Sep-17 21-May-18 1-Dec-15 20-Apr-16 21-Sep-17 21-May-18 1-Dec-15 20-Apr-16 21-Sep-17 21-May-18 7-Nov-18 1-Dec-15 20-Apr-16 21-Sep-16 21-Feb-17 12-Sep-17	6.65 6.40 6.21 6.38 6.79 6.93 4.67 6.94 7.04 6.78 6.91 7.19 7.04 4.82 7.04 7.32 7.00	N 0.18 0.77 0.04 0.04 3.50 N 1.29 0.38 0.70 0.76 0.64 1.03 0.20 2.1 0.83 0.59 0.87 0.38	ot Enough Water -52.60 139.0 -14.7 Bailer was used t -20.80 ot Enough Water -1,860.7 144.0 616.8 12.9 28.5 -15.8 -54.5 214.6 137.9 644.3 131.5 10.0 -48.6 -91.3	To Take Readings 24.76 24.6 25.9 to collect sample. 26.60 To Take Readings 23.2 25.6 25.3 24.2 26.0 27.7 24.8 23.3 24.3 25.1 25.8 25.4 24.6 To Take Readings	1111.00 1,091 1,180 2787.00 2787.00 634 630 680 680 1,194 686 817 521 540 559 570 933 598	76.71 158 76.71 158 182 20.4 678.0 95.0 33.8 79.4 52.6 14.3 27.2 36.8

NOTES:

°C = Degrees Celsius.

μS/cm = Micro-Siemens per centimeter.

mg/L = Milligrams per liter.

mV = Millivolts.

NS = Not Sampled.

NTU = Nephlometric Turbidity Units.

 $\rm EA$ Engineering, Science, and Technology, Inc. PBC

TABLE 3. GROUND WATER ANALYTICAL RESULTS FOR DISSOLVED METALS

imple Location/Well ID	Sample Date 5-Jun-12	Iron (μg/L) <25.0 U	Manganese (μg/L) 14.2	Arsenic (μg/L) <2.00 U	Calcium (μg/L) J 126,000	Sodium (μg/L) 53,700	Magnesium (μg/L) 12,100	Aluminum (μg/L) <100 U	Cadmium (μg/L) 6.4 U	Barium (μg/L) J 874
	17-Jul-12 25-Sep-12	5,860 12,600	445 860	57.9 148 J	140,000	65,200 50,500 J	15,600 16,000 J	<200 U	<2.0 U	J 856
	18-Dec-12 6-Jun-15	12,300 98.7 J	794 281	51.8 2.47	168,000 140,000	56,300 63,400	15,500 14,700	2320 5.93 J	<1.00 U	J 748
MW-01	3-Dec-15 22-Apr-16	1,060 40,900	286 2,200 B	11.6 129	122,000 208,000	53,800 147,000	12,300 37,500	<100 U <2.57 U	< 5.00 U <0.114 U	J 727
	20-Sep-16 23-Feb-17	29,800 26,200	1,490 1,260	380 127	300,000 219,000	96,700 69,800	28,300 23,400	<100 U <100 U	< 5.00 U	J 922
	13-Sep-17 24-May-18	29,900 26,200	1,540 1,360	166 177	203,000 170,000	68,300 65,800	23,300 20,000	<100 U <100 U	< 5.00 U	J 754
	7-Nov-18 20-Sep-16	26,600 28,400	1,450 1,460	167 363	187,000 299,000	67,600 93,400	21,400 27,700	<200 U <100 U	<1.0 U	J 634
MW 01 DUD	23-Feb-17	25,400	1,310	114 150	229,000	70,600	24,000	<100 U	< 5.00 U	J 670
MW-01-DUP	13-Sep-17 24-May-18	28,100 27,300	1,540 1,350	183	201,000 172,000	66,900 65,900	22,700 20,300	<100 U <100 U	< 5.00 U	J 722
	7-Nov-18 3-Dec-15	26,000 <25.0 U	1,410 <5.00 U	170 <2.00 U		66,300 82,700	21,000 10,000	<200 U <100 U	<1.00 U <5.00 U	J 708
	22-Apr-16 20-Sep-16	8,740 19,900	1,250 B 2,340	37.0 41.1	52,300 162,000	53,400 119,000	7,420 15,800	9.38 J <100 U	<0.114 U < 5.00 U	J 614
MW-02	23-Feb-17 13-Sep-17	8,440 3,780	2,040 767	34.3 31.0	99,500 84,500	136,000 51,000	13,300 7,680	<100 U <100 U	< 5.00 U	J 522
	24-May-18 7-Nov-18	6,640 1,030	1,040 247	40.3 10.3	112,000 109,000	103,000 169,000	12,600 13,300	<100 U 221 U	< 5.00 U	J 612
MW-02-DUP	3-Dec-15 22-Apr-16	<25.0 U 7,100	<5.00 U 1,180 B	<2.00 U 26.2	96,900 47,800	82,900 53,900	10,000 6,890	<100 U 6.13 J	<5.00 U <0.114 U	
	3-Dec-15 22-Apr-16	140 87.2	39.0 15.0 B	4.40 13.9	145,000 133,000	81,700 60,300	18,000 15,100	101 39.1	<5.00 U 0.61 J	_
MW-03	22-Sep-16 23-Feb-17	1,070 357	344 126	4.70 23.0	107,000 72,300	40,500 22,400	11,100 7,250	<100 U <100 U	< 5.00 U < 5.00 U	
	12-Sep-17 24-May-18	322 42.9	84.6 12.1	9.2 13.1	68,400 76,400	23,200 28,500	84.6 8,100	<100 U <100 U	< 5.00 U < 5.00 U	
	7-Nov-18 2-Dec-15	129 UC 885	16.6 266	6.2 12.4	124,000 163,000	49,100 129,000	12,800 19,700	27.3 J <100 U	0.16 <5.00 U	
	21-Apr-16 22-Sep-16	104 1,780	135 B 969	29.4 16.7	130,000 158,000	82,100 107,000	13,500 19,100	4.15 J <100 U	<0.114 U <5.00 U	J 319
MW-04	22-Sep-16 22-Feb-17 12-Sep-17	335 527	194 246	64.2 11.2	109,000 97,300	60,200 49,700	12,800 9,270	<100 U <100 U <100 U	< 5.00 U	J 285
	24-May-18 6-Nov-18	799 1240	252 402	5.4 15.5	201,000 269,000	144,000 204,000	30,900 35,500	<100 U <100 U 73.4 J	< 5.00 U	J 436
	2-Dec-15	<25.0 U	19.1	<2.00 U	139,000	72,800	18,800	<100 U	<5.00 U	J 431
MWAT	21-Apr-16 21-Sep-16	15.0 J 35.1	7.23 B 18.7	1.76 <2.00 U	,	19,900 59,600	7,250 19,000	16.2 J <100 U	<0.114 U <5.00 U	J 641
MW-05	22-Feb-17 13-Sep-17	<25.0 U 1,480	<5.00 U 57.5	<1.00 U <2.50 U	171,000	51,100 56,000	18,500 22,100	<100 U 1980	< 5.00 U	J 776
	24-May-18 5-Nov-18	<25.0 U <100 U	14.5 <15.00 U	<2.50 U 0.61 J	158,000	89,500 37,700	24,400 20,100	<100 U <200	< 5.00 U <1.00 U	J 683
	1-Dec-15 21-Apr-16	120 265	12.0 260 B	<2.00 U	79,900	79,600 37,400	11,800 7,110	<100 U 12.3 J	<5.00 U <0.114 U	J 273
MW-06	21-Feb-17 11-Sep-17	5,780 6,460	1,220 879	21.0 47.3	130,000 144,000	74,100 54,400	12,500 13,200	318 <100 U	< 5.00 U	J 641
	24-May-18 6-Nov-18	7,210 12,000	1,520 1,100	66.2 50.5	176,000 164,000	93,200 100,000	18,300 16,800	213 <200 U	< 5.00 U	
	1-Dec-15 20-Apr-16	<25.0 U 1,910	68.9 78.2	<2.00 U 4.95	126,000 101,000 B	18,200 22,100	10,300 10,800	<100 U 1,620	<5.00 U <0.114 U	,
MW-07	20-Feb-17 11-Sep-17	<25.0 U <25.0 U	53.1 27.6	<1.00 U <2.50 U	. ,	18,000 17,700	10,800 10,900	<100 U <100 U	< 5.00 U < 5.00 U	
	24-May-18 6-Nov-18	60 <100 U	280 21.1	<2.50 U		18,800 19,600	9,990 11,500	<100 U <200 U	< 5.00 U	, , ,
MW-07-DUP	1-Dec-15 2-Dec-15	<25.0 U	72.6 496	<2.00 U		19,200 16,600	10,800 8,120	<100 U <100 U	<5.00 U	J 1,290
MW-08	19-Apr-16 20-Sep-16	121 F1 98.2		6.50	124,000 B 122,000	42,900 39,900	14,200 13,900	16.7 J <100 U	<0.114 U <5.00 U	J 814
1111 00	21-Feb-17 13-Sep-17	51.1 171	161 119	1.90 <2.50 U	128,000	42,900 39,200	14,800 13,600	<100 U <100 U	< 5.00 U	J 1,060
	2-Dec-15	1,520	40.0	<2.00 U	115,000	35,300	10,000	1,820	<5.00 U	J 673
N 400	21-Apr-16 22-Sep-16	<6.09 U 40.2	1.52 JB 5.00	<2.00 L	- /	42,200 57,900	10,600 15,300	13.1 J <100 U	<0.114 U <5.00 U	J 628
MW-09	23-Feb-17 13-Sep-17	<25.0 U 42.7	<5.00 U 7.20	<1.00 U <2.50 U	142,000	51,900 38,900	14,900 13,400	<100 U <100 U	< 5.00 U	J 830
	24-May-18 5-Nov-18	50.1 <100 U	5.70 <15.0 U	<2.50 U 0.89 J	171,000	42,800 47,800	14,700 16,300	<100 U 62.3 J	< 5.00 U	J 817
	3-Jun-15 2-Dec-15	<100 U 67.8	73.90 117	2.19 <2.00 U	, , , , , ,	73,600 69,600	17,500 15,200	<20.0 U <100 U	<1.00 U <5.00 U	J 1,070
MW-20	22-Apr-16 22-Sep-16	<6.09 U 13,400	2,430	12.7 228	136,000 277,000	54,600 84,600	14,300 32,700	<2.57 U <100 U	<0.114 U < 5.00 U	J 1,410
20	21-Feb-17 13-Sep-17	16,400 15,600	1,880 1,410	181 182	277,000 234,000	99,400 86,400	33,200 28,000	<100 U <100 U	< 5.00 U	J 1,130
	24-May-18 6-Nov-18	69,300 12,100	2,360 796	271 82.2	368,000 227,000	115,000 85,500	54,300 27,000	22300 5,420	< 5.00 U	
	3-Jun-15 1-Dec-15	<100 U 3,380	828 339	1.35 2.60	162,000 159,000	61,900 60,800	17,700 16,600	<20.0 U 2,060	<1.00 U <5.00 U	,
MW-21	22-Apr-16 22-Sep-16	15.6 J <25.0 U	571 B 735	8.84 10.5	130,000 132,000	43,700 49,600	13,200 14,000	11.1 J <100 U	<0.114 U < 5.00 U	
1V1 W -∠1	22-Feb-17 13-Sep-17	<25.0 U <25.0 U	718 892	3.30 7.70	146,000 141,000	57,100 53,000	15,400 15,200	<100 U <100 U	< 5.00 U	,
	24-May-18 7-Nov-18	4640 323 UC	461	6.10	142,000 152,000	58,700 56,700	16,200 15,600	4430 <200 U	< 5.00 U	J 1,040
MW-21-DUP	7-Nov-18 3-Jun-15	187 UC <100 U		7.20 0.9 J	148,000	54,800 81,200	15,300 16,200	<200 U <20.0 U	<1.00 U	J 1,050
	30-Nov-15 21-Apr-16	55.2 <6.09 U	34.6 166 B	<2.00 U		75,300 75,000	13,800 16,200	<100 U <2.57 U	<5.00 U <5.114 U	J 1,110
MW-22	21-Feb-17 12-Sep-17	3,550 3,210	1880 1220	48.2 35.5	221,000 202,000	93,000 93,000 84,900	24,100 21,600	240 <100 U	< 5.00 U	J 1,420
	24-May-18 6-Nov-18	3,210 3,210 2,860	1470 682	48.2 24.4	202,000 206,000 154,000	91,600 60,200	22,300 15,500	271 499	< 5.00 U	J 1,480
	21-Apr-16 21-Feb-17	<6.09 U 4,120	211 B 1,930	5.36 52.2	154,000 146,000 224,000	75,800 94,200	15,500 16,300 24,600	<2.57 U	<0.114 U <5.00 U	1,140
MW-22-DUP	12-Sep-17	3,190	1,550	48.9	203,000	84,400	22,000	<100 U	< 5.00 U	1,320
	24-May-18 3-Jun-15	3,310 <100 U		48.5 0.41 J	213,000 1 102,000 1 103,000	94,700 24,800	22,900 11,200	230 <20.0 U	< 5.00 U	J 642
	1-Dec-15 20-Apr-16	278 15.3 J	32.1 1.22 J	<2.00 U 3.08	80,000 B		10,600 9,750	317 14.5 J	<5.00 U <0.114 U	J 381
MW-23	21-Sep-16 20-Feb-17	530 <25.0 U	34.5 <5.00 U	<2.00 U	108,000	21,400 23,600	10,300 11,200	592 <100 U	< 5.00 U	J 831
	12-Sep-17 24-May-18	<25.0 U 780	<5.00 U 84.5	<2.50 U	107,000	20,200 25,300	9,930 11,300	<100 U 868	< 5.00 U	J 869
MW-23-DUP	6-Nov-18 21-Sep-16	<100 U 694	<15.00 U 34.6	<1.0 U <2.00 U	, , , , , , , , , , , , , , , , , , , ,	24,600 21,000	11,400 10,100	<200 U 831	<1.00 U <5.00 U	J 767
	3-Jun-15 1-Dec-15	<100 U <25.0 U		0.89 J <2.00 U	98,200	33,400 32,900	8,760 4,400	<20.0 U <100 U	<1.00 U <5.00 U	
	20-Apr-16 21-Sep-16	2,510 <25.0 U	367 5.80	7.17 <2.00 U	121,000 B		10,900 4,930	1,820 <100 U	<0.114 U <5.00 U	J 1,080
NOV 24	21-3cp-10					30,100	4,370	<100 U		J 217
MW-24	21-Feb-17	<25.0 U <25.0 U		<1.00 U <2.50 U						J 177
MW-24				<1.00 C <2.50 U <2.50 U 0.62 J	J 30,200 J 89,000	28,100 27,000 26,300	3,510 9,690 10,200	<100 U <100 U <100 U <200 U	< 5.00 U < 5.00 U < 5.00 U < 1.0 U	J 361

NOTES:

MW-25 was dry during the pre-injection sampling event and was not sampled.

B = Compound was found in the blank and sample.

F1 = MS and/or MSD Recovery is outside acceptance limits.

J = Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

μg/L = Micrograms per liter.

NS = Not Sampled.

U = Indicates the analyte was analyzed for but not detected.

TABLE~4.~GROUND~WATER~ANALYTICAL~RESULTS~FOR~MONITORED~NATURAL~ATTENUATION~PARAMETERS

mple Location/Well ID	Sample Date	Methane (μg/L)		Nitrate Nitrite (mg/L)	as N	Total Organic Carbon (mg/L)	Orthophosphate (mg/L)	Ammoni (mg/L)	a
	3-Dec-15	2,350		1.36	F1	2.18	<0.0104 U	< 0.0675	
	22-Apr-16 20-Sep-16	7,430 15,900		<0.017 <0.019	U	1,690 113	16.8 H 0.194 H	7.35 0.099	
MW-01	23-Feb-17	18,100		< 0.019	U	30.6	0.0734	2.49	
	13-Sep-17	14,000		0.074	J	15.7	0.5920 F1 B	2.38	
	24-May-18 7-Nov-18	14,000 12,000		<0.040 0.041	U J	8.7 7.2	0.6100 1.30	1.70 3.00	
	20-Sep-16	17,400		< 0.019	U	113	0.121 H	0.132	
	23-Feb-17	16,100		< 0.019	U	30.1	0.325	2.65	
MW-01-DUP	13-Sep-17 24-May-18	14,200 14,000		0.072 <0.040	J U	15.7 8.8	1.130 B 0.200	2.44 1.80	
	7-Nov-18	12,000		0.046	J	8.0	1.20	0.54	
	3-Dec-15	2.50		8.12		1.36	0.025 J	< 0.0675	
	22-Apr-16 20-Sep-16	16,800 18,900		<0.017 <0.019	U U	89.9 20.6	5.32 H 0.373 H	0.517 1.98	
MW-02	23-Feb-17	9,220		< 0.019	U	9.31	1.95	1.34	
	13-Sep-17	2,900		0.027	J	3.79	1.35 B	0.60	
	23-May-18 7-Nov-18	10,000		0.400 15.800		4.80 4.70	1.40 0.40	0.62	
MW-02-DUP	3-Dec-15	1.88		6.47		1.41	0.032 J	< 0.0675	
MW-02-DUP	22-Apr-16	11,000		< 0.017	U	94.0	4.01 H	0.555	
	3-Dec-15 22-Apr-16	0.894 3.27	J	10.1 2.42		5.19 14.1	0.281 0.314 H	<0.0675 <0.0675	
	22-Sep-16	1,690		2.28		7.08	0.415	0.341	
MW-03	22-Feb-17	2,950		< 0.019	U	22.5	0.737	0.0878	
	12-Sep-17 22-May-18	51.0 4.0	J	0.21		9.0 16.0	1.740 0.550	0.3040 <0.050	
	6-Nov-18	20.0	3	0.800		10.30	0.51	0.130	
	2-Dec-15	283		0.0301	J	19.3	0.781	1.00	
	21-Apr-16	114		<0.017	U	20.6	0.501	<0.0675	_
MW-04	22-Sep-16 22-Feb-17	2,740 6.59	_	<0.019 <0.019	U U	15.4 18.3	0.566 0.376	1.140 0.158	
* -	12-Sep-17	785.00		0.057	J	17.5	1.070	0.422	
	23-May-18	97.00		0.130	**	11.8	0.290	0.660	
	6-Nov-18 2-Dec-15	24.00 36.3	_	<0.040 5.48	U	15.5 1.98	0.31 <0.0104 U	0.082 <0.0675	
	21-Apr-16	1.36		1.21		4.61	0.064	< 0.0675	
MW 05	21-Sep-16	66.2	$\Box \Gamma$	0.927	\Box	2.44	0.010 J	<0.022	
MW-05	22-Feb-17 13-Sep-17	8.10 42.30		1.58		2.57 2.15	0.009 J 0.006 JB	<0.022 <0.022	
	21-May-18	3.30	J	11.30		2.10	0.034 J	< 0.050	
	5-Nov-18	<3.00	U	0.97		2.60	0.013	<0.050	_
	1-Dec-15 21-Apr-16	5.73 12,000	_	1.88 <0.017	U	4.17 31.1	0.105 J 0.347	<0.0675 <0.0675	
	21-Sep-16	14,200		< 0.017	U	79.0	0.620	0.134	
MW-06	22-Feb-17	9,940		< 0.019	U	31.2	0.313	0.572	
	11-Sep-17 22-May-18	11,000 15,000		<0.019 <0.040	U U	7.1 8.5	0.233 B 1.200	0.450 1.200	
	6-Nov-18	10,000		<0.040	U	10.20	0.660	1.100	
	1-Dec-15	1.05		0.371		0.936	J 0.023 J	< 0.0675	
	20-Apr-16	<0.357 <0.218	U	1.93			J <0.0519 U J <0.006 U	<0.0675 <0.022	
MW-07	21-Sep-16 20-Feb-17	0.749	J	0.563 0.672		1.05	0.0190 J	0.0252	
	11-Sep-17	3.180	J	0.762	F1	0.58	J 0.0524 B	< 0.022	
	21-May-18	7.500	**	0.560		1.50	0.0490 J	<0.050	
MW-07-DUP	5-Nov-18 1-Dec-15	<3.00 1.11	U	0.300 0.382			J <0.003 U J 0.0250 J	0.052 <0.0675	
1111 0, 201	2-Dec-15	710		< 0.017	U F1	35.8	0.253	0.294	
MW 00	19-Apr-16	276		0.781			0.0273 J	<0.0675	
MW-08	20-Sep-16 21-Feb-17	114		0.772 0.896		1.57 1.73	0.0256 J H 0.0241 J	<0.022 <0.022	Ţ
	13-Sep-17	3.53	J	0.344		1.40	0.0316 JB	< 0.022	
	2-Dec-15	<0.357	U	1.57			J <0.0104 U	<0.0675	
	21-Apr-16 22-Sep-16	0.493 0.485	J	1.67 1.49		2.57 2.36	0.0238 J <0.006 U	<0.0675 <0.022	
MW-09	23-Feb-17	<0.218	U	2.64		2.30	0.0099 J	< 0.022	
	12-Sep-17	0.333	J	2.86		1.89	<0.187 U	< 0.022	
	24-May-18 5-Nov-18	7.300 <3.00	U	2.30		1.90 2.20	<0.03 U 0.0085 J	<0.05 <0.05	
	2-Dec-15	969	-	0.235		5.09	<0.0519 U	< 0.0675	
	22-Apr-16	2,650		< 0.017	U	5.29	0.015 ЈН	< 0.0675	
MW-20	22-Sep-16 21-Feb-17	8,440 13,900		<0.019 <0.019	U F1 U	76.0 34.7	<0.006 U <0.006 U	<0.022 <0.022	
20	13-Sep-17	10,300		0.032	JF1	6.2	<0.006 U	0.0593	_
	24-May-18	12,000		< 0.040	U	125.0	<0.060 U	< 0.050	
	6-Nov-18	12,000 4.16		<0.040 16.2	U	6.70 1.52	<0.015 U 0.450 J	0.0810 <0.0675	
	1-Dec-15 22-Apr-16	18.4		2.74		1.52	0.450 J 0.0255 J H	<0.0675	
	22-Sep-16	1,600		2.20		1.12	0.0175 J	< 0.022	_
MW-21	22-Feb-17 13-Sep-17	1,160 283		1.13 0.46		1.07 0.98	0.0097 J J 0.0204 JB	<0.022 <0.022	
	23-May-18	160		1.90		1.50	0.0204 JB <0.15 U	<0.022	
	7-Nov-18	22		1.20		1.60	0.0120	0.1100	
MW-21-DUP	7-Nov-18 30-Nov-15	18 590	_	1.20 1.15	F1	1.60	0.0120 0.300 J	0.0680 <0.0675	
	30-Nov-15 21-Apr-16	834	-+	< 0.017	U F1	2.35 2.88	0.300 J <0.0104 U	<0.0675	
	21-Sep-16	12,300		< 0.019	U	15.2	<0.006 U	0.0319	
MW-22	21-Feb-17	8,270		<0.019	U	3.46	<0.006 U	<0.022	
	12-Sep-17 22-May-18	12,300 11,000	_	0.024 <0.040	J U	3.01 17.20	<0.187 U 0.0710 J	<0.022 <0.050	
	6-Nov-18	9,700		< 0.040	U	5.80	0.1400	0.0720	
	21-Apr-16	998		0.018	J	2.93	<0.0104 U	<0.0675	
MW-22-DUP	21-Feb-17 12-Sep-17	7,690 13,000		0.078	J J	3.30 3.03	<0.006 U <0.187 U	0.0346 <0.022	_
	22-May-18	10,000		< 0.040	U	5.00	0.0630 J	< 0.050	
	1-Dec-15	<0.357	U	1.01		1.09	<0.0104 U	<0.0675	
	20-Apr-16 21-Sep-16	<0.357 0.272	U J	0.485 1.24			J <0.0519 U J <0.006 U	<0.0675 0.0440	
MW-23	20-Feb-17	<0.218	U	1.15			J <0.006 U	<0.022	_
	12-Sep-17	< 0.218	U	1.09		0.616	J <0.187 U	< 0.022	
	21-May-18 5-Nov-18	<0.20 <3.00	U	1.50			J <0.15 U J <0.003 U	<0.050 0.0570	
MW-23-DUP	5-Nov-18 21-Sep-16	<3.00 <0.218	U	1.60			J <0.003 U J <0.006 U	<0.022	
J 224	1-Dec-15	< 0.357	U	0.468	F1 F2	1.55	<0.0104 U	< 0.0675	
	20-Apr-16	0.754	J	0.670			J <0.0519 U	<0.0675	
MW-24	21-Sep-16 21-Feb-17	0.312	J	0.543 1.02			J <0.006 U J <0.006 U	<0.022 <0.022	
	12-Sep-17	<0.218	U	1.21			J <0.187 U F1	<0.022	_
	22-May-18	<3.0	U	0.65		1.100	0.0300 J	< 0.050	
	6-Nov-18	< 3.00	U	0.65		0.540	J 0.0210	< 0.050	

NOTES:

F1 = MS and/or MSD Recovery is outside acceptance limits.

F2 = MS/MSD RPD exceeds control limits.

H = Sample was prepped or analyzed beyond the specified holding time.

J = Result is less than the RL but greater than or equal to the MDL and the concentration

is an approximate value.

MDL = Method Detection Limit

MS/MSD = Matrix Spike/Matrix Spike Duplicate

RL = Reporting Limit.

U = Indicates the analyte was analyzed for but not detected.

 $\rm EA$ Engineering, Science, and Technology, Inc. PBC

TABLE 5. GROUND WATER ANALYTICAL RESULTS FOR VOLATILE ORGANIC COMPOUNDS

Sample Location/Well ID	Sample Date	PCI		TCE		cis-1,2-I		trans-1,2-I		Vinyl Chle		Ethe			Ethane	
Sample Location/ Well ID	5-Jun-12	(μg/L) 17,100	(μM/L)	(μg/L) 980	(μM/L) 7.46	(μg/L) 1,260	(μM/L) 13.0	(μg/L) 7.60	(μM/L) 0.078	(μg/L) 117	(μM/L) 1.87	(μg/L) 0.823 J	(μM/L) 0.029	(μg/L) 0.800	J	(μM/L) 0.027
	17-Jul-12 25-Sep-12	944 53.0	J 5.69 0.320	101	0.769	6,050 16,000	62.4 165	21.1 16.0 J	0.218 J 0.165	84.2 190	1.35	0.317 J <28.0 U	0.011	0.580 <32.0	J U	0.019
	18-Dec-12	75.0 29,800	0.452 179.70	17.0 2,510	0.129	7,800 11,500	80.5 119	8.90 <2,500 L	0.092	93.0 794 J	1.49	12.5	0.446	1.08	U	
MW-01	6-Jun-15 3-Dec-15	14,500	87.4	1,990	15.1	6,640	68.5	36.3	0.378	420	6.72	NA 3.53	0.126	NA 2.41		0.080
	22-Apr-16 20-Sep-16	61.3 <2.00	0.370 U	20.2 <2.00 U		12,300 6.40	0.066	27.4 4.90	0.286 0.051	386 5.00	6.18 0.080	64.0 111	2.28 3.96	3.00 1.72	U	0.100 0.057
	23-Feb-17 13-Sep-17		U U	<1.00 U <1.00 U		11.4 24.5	0.118 0.253	9.90 4.60	0.103 0.048	1.20 78.1	0.019 1.250	96.0 87.9	3.42 3.13	187 589		6.22 19.59
	24-May-18 7-Nov-18	<1.00	U 0.019	<1.00 U	0.029	471.0 1,230.0	4.858 12.687	4.60 7.40	0.048	276.00 311.00	4.416 4.976	140.0 150.0	4.99 5.35	1300 1,500		43.23 49.88
	20-Sep-16 23-Feb-17		U U	<2.00 U <1.00 U		3.80 10.5	0.039 0.108	4.90 10.0	0.051 0.104	3.80 1.30	0.061 0.021	124 93.2	4.42 3.32	1.72 171	U	5.69
MW-01-DUP	13-Sep-17 24-May-18	<1.00	U	<1.00 U		21.5 462.0	0.222 4.765	4.6 4.9	0.048	72.5 263.00	1.160 4.208	87.1 140.0	3.11 4.99	599 1300		19.92 43.23
	7-Nov-18	2.8	0.017	1.8		1,190.0	12.274	5.60	0.058	309.00	4.944	150.0	5.35	1,500		49.9
	3-Dec-15 22-Apr-16	599 13.0	3.61 0.078	210 3.08	1.60 0.023	630 351	6.50 3.62	3.40 1.88	0.035 0.020	<2.00 U 237	3.79	<0.324 U 8.82	0.314	<0.303 <0.303	U	
MW-02	20-Sep-16 23-Feb-17	<2.00 <1.00	U U	<2.00 U		<2.00 U	1.92	<2.00 U	0.019	<2.00 U 46.9	0.750	0.796 U 6.13 P		1.15 65.7	U	2.18
	13-Sep-17 23-May-18	<1.00 1.8	U 0.011	<1.00 U	0.009	5	0.07 0.05	<1.00 U		3.8 <2.00 U	0.061	4.52 J 0.74 J	0.161 0.026	51.4 27.0		1.71 0.90
	7-Nov-18 3-Dec-15	508.0 900	3.063 5.43	222.00 254	1.93	625.00 545	5.62	1.1 3.40	0.035	35.00 <2.00 U		41.00 <0.324 U	1.462	41.00 <0.303	U	1.36
MW-02-DUP	22-Apr-16	12.8	0.077	3.01	0.023	337	3.48	1.78	0.019	270	4.32	6.37	0.227	3.75 <0.303		0.125
	3-Dec-15 22-Apr-16	12.7 2.22	0.077	16.2 2.03	0.123 0.015	182 15.3	1.88 0.158	<0.192 L	J	<2.00 U 0.663 J	0.011	<0.324 U		< 0.303	U	
MW-03	22-Sep-16 22-Feb-17	28.9 11.9	0.174 0.072	59.5 13.0	0.453 0.099	323 94.2	3.33 0.97	3.50 <1.00 U	0.036 J	35.4 15.8	0.566 0.253	1.19 J <0.398 U		<0.573 <0.573	U	
	12-Sep-17 22-May-18	1.2 3.4	0.007 0.021	7.3 4.9	0.056 0.037	191 34.2	1.97 0.35	<1.00 U <1.00 U	_	9.5 <2.00 U	0.152	1.17 J <0.20 U		<0.573 <0.20	U	
	6-Nov-18 2-Dec-15	2.50 <2.00	0.015 U	4.00 <2.00 U	0.030	39.8 <2.00 U	0.41 J	<1.00 <2.00 U	J	<1.00 <2.00 U		<1.00 U <0.324 U		<1.00 <0.303	U U	
	21-Apr-16 22-Sep-16	< 0.333	U	<0.138 U <2.00 U	J	<0.157 U		<0.192 U <2.00 U	J	<0.248 U <2.00 U		<0.324 U <0.324 U <0.398 U		<0.303 <0.573	U	
MW-04	22-Feb-17	<1.00	U	<1.00 U	J	<1.00 U	J	<1.00 U	J	<1.00 U		<0.398 U		< 0.573	U	
	12-Sep-17 23-May-18	<1.00	U U	<1.00 U	J	<1.00 U	J	<1.00 U	J	<1.00 U <1.00 U		<0.398 U <0.20 U		<0.573 <0.20	U	
	6-Nov-18 2-Dec-15	<2.00	U U	<1.00 U <2.00 U	J	<1.00 U <2.00 U	J	<1.00 U <2.00 U	J	<1.00 U <2.00 U		<1.00 U <0.324 U		<1.00 <0.303	U U	
	21-Apr-16 21-Sep-16		U	<0.138 U <2.00 U		<0.157 U		<0.192 U <2.00 U		<0.248 U <2.00 U		<0.324 U <0.398 U		<0.303 <0.573	U U	
MW-05	22-Feb-17 13-Sep-17		U U	<1.00 U <1.00 U		<1.00 U <1.00 U		<1.00 U <1.00 U	_	<1.00 U <1.00 U		<0.398 U <0.398 U	_	<0.573 <0.573	U U	
	21-May-18 5-Nov-18	<1.00	U U	<1.00 U	J	<1.00 U	J	<1.00 U	J	<1.00 U		<0.20 U <1.00 U		<0.20 <1.00	U	
	1-Dec-15	3,890	23.5	393	2.99	1,130	11.7	<5.00 L	J	39.9	0.638	<0.324 U		< 0.303	U	
	21-Apr-16 21-Sep-16		0.055 U	1.49 <2.00 U		229 F <2.00 U	J	2.41 12.0	0.025 0.125	71.5 6.20	1.14 0.10	26.7 148	0.952 5.28	4.63 <1.15	U	0.154
MW-06	21-Feb-17 11-Sep-17	<1.00	U U	<1.00 U <1.00 U	J	2.10 9.00	0.02	<1.00 U	0.017	<1.00 U 15.5	0.25	<0.398 U 58	2.06	62.3 159.0		2.07 5.29
	22-May-18 6-Nov-18		U U	<1.00 U		3.30 1.60	0.03	1.2 1.10	0.013	2.30 5.30	0.04	0.44 J <1.00 U	0.02	29.0 60		0.96 2.00
	1-Dec-15 20-Apr-16	<2.00 0.740	U J 0.004	<2.00 U <0.138 U		<2.00 U <0.157 U		<2.00 U <0.192 U	_	<2.00 U <0.248 U		<0.324 U <0.324 U	_	<0.303 <0.303	U U	
MW-07	21-Sep-16 20-Feb-17	<2.00	U U	<2.00 U	J	<2.00 U	J	<2.00 U	J	<2.00 U <1.00 U		<0.398 U <0.398 U		<0.573 <0.573	U	
W W-O/	11-Sep-17	<1.00	U	<1.00 U	J	<1.00 U	J	<1.00 U	J	<1.00 U		<0.398 U		< 0.573	U	
	21-May-18 5-Nov-18	<1.00	U U	<1.00 U	J	<1.00 U	J	<1.00 U	J	<1.00 U <1.00 U		<0.20 U <1.00 U		<0.20 <1.00	U U	
MW-07-DUP	1-Dec-15 2-Dec-15	<2.00 3.50	U 0.021	<2.00 U		<2.00 U		<2.00 U <2.00 U		<2.00 U <2.00 U		<0.324 U 0.377 J	_	<0.303 <0.303	U U	
MW-08	19-Apr-16 20-Sep-16	0.413 <2.00	J 0.002 U	<0.138 U <2.00 U		0.393 J <2.00 U		0.192 U <2.00 U		<0.248 U <2.00 U		<0.324 U F1 <0.398 U		<0.303 <0.573	U F1 F2 U F1	
	21-Feb-17 13-Sep-17		U U	<1.00 U <1.00 U		<1.00 U <1.00 U		<1.00 U		<1.00 U <1.00 U		<0.398 U <0.398 U		<0.573 <0.573	U F1 U	
	2-Dec-15	8.20	0.049 J 0.002	<2.00 U <0.138 U	J	7.10 <0.157 U	0.073	<2.00 U <0.192 U	J	<2.00 U <0.248 U		<0.324 U <0.324 U		<0.303 <0.303	U	
MW 00	21-Apr-16 22-Sep-16	<2.00	U	<2.00 U	J	<2.00 U	J	<2.00 L	J	<2.00 U		<0.398 U		< 0.573	U	
MW-09	23-Feb-17 12-Sep-17	<1.00	U U	<1.00 U	J	<1.00 U	J	<1.00 U	J	<1.00 U <1.00 U		<0.398 U <0.398 U		<0.573 <0.573	U U	
	24-May-18 5-Nov-18		U U	<1.00 U <1.00 U		<1.00 U		<1.00 U	_	<1.00 U <1.00 U		<0.20 U <1.00 U	_	1.200 <1.00	J U	0.04
	3-Jun-15 2-Dec-15	2,380 5,550	14.35 33.5	586 1,850	4.46 14.1	13,000 13,800	134 142	<500 U 511 J	J J 5.33	191 J 313	3.06 5.01	NA 1.70 J	0.061	NA 1.22	J	0.041
	22-Apr-16 22-Sep-16	4,140 475	25.0 2.86	977 198	7.44 1.51	19,600 J 11,900	202 123	45.8 J 72.5	0.477 0.756	932 2,500	14.9 40.0	19.9 1,910	0.709 68.1	2.09 10.3	U	0.070
MW-20	21-Feb-17 13-Sep-17	135 228	0.814 1.375	60.2 61.4	0.458	2,350 1,400	24.2	26.2 25.3	0.273 0.264	304 340	4.86	1,100 490	39.2 17.5	<1.72 248	Ü	8.247
	23-May-18	7	0.045	8.9	0.068	1,460	15.1	18.7	0.195	313	5.01	260	9.3	110		3.658
	6-Nov-18 3-Jun-15	6.38	0.127 0.038	71.3 0.433	0.543	550 1.18 J		8.1 <5.00 U		117 <2.00 U		35 NA	1.2	190 NA		6.319
	1-Dec-15 22-Apr-16	2.20 0.477	0.013 J 0.003	<2.00 U <0.138 U	J	<2.00 U <0.157 U	J	<2.00 U <0.192 U	J	<2.00 U <0.248 U		<0.324 U <0.324 U		<0.303 <0.303	U U	
MW-21	22-Sep-16 22-Feb-17	<1.00	U U	<2.00 U	J	<2.00 U	J	<2.00 U	J	<2.00 U <1.00 U		<0.398 U <0.398 U		<0.573 <0.573	U U	
	13-Sep-17 23-May-18		U U	<1.00 U <1.00 U		<1.00 U		<1.00 U <1.00 U		<1.00 U <1.00 U		<0.398 U 0.220 J		<0.573 0.260	U J	0.01
MW-21-DUP	7-Nov-18 7-Nov-18		U U	<1.00 U		<1.00 U		<1.00 U		<1.00 U <1.00 U		<1.00 U <1.00 U		<1.00 <1.00	U U	
	3-Jun-15	10,100	60.91 45.3	934 J 957	7.11 7.28	4,230 3,660	43.6 37.8	<1,000 U		182 J 110	2.91 1.76	NA <0.324 U		NA <0.303	U	
	30-Nov-15	7.510			1.71	11,000	37.8 113 8.14	88.2 17.0	0.919	615 540	9.84 8.64	14.0 831	0.499	1.08	J U	0.036
	30-Nov-15 21-Apr-16	7,510 639	3.85	225	т			1 / .0		340		831			U	
MW-22	21-Apr-16 21-Sep-16 21-Feb-17	639 <2.00 <1.00	3.85 U U	<2.00 U 1.50	0.011	789 596	6.15	8.50	0.177	172	2.75	107	3.81	125		4.16
MW-22	21-Apr-16 21-Sep-16 21-Feb-17 12-Sep-17 22-May-18	639 <2.00 <1.00 <1.00 <1.00	3.85 U U U U	<2.00 U 1.50 6.50 1.00	0.011 0.049 0.008	596 584 69.9	6.15 6.02 0.72	8.50 8.3 9.7	0.089 0.087 0.101	173 122	2.77 1.95	64 110	2.27 3.92	107 130		3.56 4.32
MW-22	21-Apr-16 21-Sep-16 21-Feb-17 12-Sep-17	639 <2.00 <1.00 <1.00	3.85 U U U	<2.00 U 1.50 6.50	0.011 0.049	596 584	6.15 6.02 0.72 0.30	8.50 8.3	0.089 0.087	173	2.77	64	2.27	107	J	3.56
MW-22 MW-22-DUP	21-Apr-16 21-Sep-16 21-Feb-17 12-Sep-17 22-May-18 6-Nov-18	639 <2.00 <1.00 <1.00 <1.00 <1.00 11 1,680 <1.00	3.85 U U U U U 0.06	<2.00 U 1.50 6.50 1.00 2.70	0.011 0.049 0.008 0.021	596 584 69.9 29.3	6.15 6.02 0.72 0.30	8.50 8.3 9.7 3.90	0.089 0.087 0.101 0.041	173 122 10	2.77 1.95 0.16	64 110 7	2.27 3.92 0.26	107 130 75	J	3.56 4.32 2.49
	21-Apr-16 21-Sep-16 21-Feb-17 12-Sep-17 22-May-18 6-Nov-18 21-Apr-16 21-Feb-17 12-Sep-17 22-May-18	639 <2.00 <1.00 <1.00 <1.00 11 1,680 <1.00 <1.00 <1.00	3.85 U U U U 0.06 10.13 U U	<2.00 U 1.50 6.50 1.00 2.70 336 1.80 6.40 1.00	0.011 0.049 0.008 0.021 2.56 0.014 0.049 0.008	596 584 69.9 29.3 12,500 E 648 523 74.2	6.15 6.02 0.72 0.30 E 129 6.68 5.39 0.77	8.50 8.3 9.7 3.90 77.8 10.2 8.0	0.089 0.087 0.101 0.041 0.811 0.106 0.083 0.107	173 122 10 675 165 170	2.77 1.95 0.16 10.8 2.64 2.72 2.05	64 110 7 17.6 101 71 100.0	2.27 3.92 0.26 0.627 3.60 2.51 3.57	107 130 75 1.82 113 132 120	J	3.56 4.32 2.49 0.061 3.76 4.39 3.99
	21-Apr-16 21-Sep-16 21-Feb-17 12-Sep-17 22-May-18 6-Nov-18 21-Apr-16 21-Feb-17 12-Sep-17 22-May-18 3-Jun-15 1-Dec-15	639 <2.00 <1.00 <1.00 <1.00 <1.00 11 1,680 <1.00 <1.00 <1.00 <1.00 <2.00	3.85 U U U U U U 0.06 10.13 U U U J 0.006 U	<2.00 U 1.50 6.50 1.00 2.70 336 1.80 6.40 1.00 5.00 U	0.011 0.049 0.008 0.021 2.56 0.014 0.049 0.008	596 584 69.9 29.3 12,500 E 648 523 74.2 <5.00 U <2.00 U	6.15 6.02 0.72 0.30 E 129 6.68 5.39 0.77	8.50 8.3 9.7 3.90 77.8 10.2 8.0 10.30 <5.00 L <2.00 L	0.089 0.087 0.101 0.041 0.811 0.106 0.083 0.107 J	173 122 10 675 165 170 128 <2.00 U <2.00 U	2.77 1.95 0.16 10.8 2.64 2.72 2.05	64 110 7 17.6 101 71 100.0 NA <0.324 U	2.27 3.92 0.26 0.627 3.60 2.51 3.57	107 130 75 1.82 113 132 120 NA <0.303	U	3.56 4.32 2.49 0.061 3.76 4.39 3.99
	21-Apr-16 21-Sep-16 21-Feb-17 12-Sep-17 22-May-18 6-Nov-18 21-Apr-16 21-Feb-17 12-Sep-17 22-May-18 3-Jun-15 1-Dec-15 20-Apr-16 21-Sep-16	639 <2.00 <1.00 <1.00 <1.00 <1.00 <1.00 <1.00 <1.00 <1.00 <1.00 <1.00 <1.00 <1.00 <1.00 <1.00 <1.00 <1.00 <1.00 <1.00	3.85 U U U 0.06 10.13 U U J 0.006 U J 0.006 U U 0.013	<2.00 U 1.50 6.50 1.00 2.70 336 1.80 6.40 1.00 <5.00 U <2.00 <0.138 U <2.00 U <2.00 U	0.011 0.049 0.008 0.021 2.56 0.014 0.049 0.008 0.008	596 584 69.9 29.3 12,500 E 648 523 74.2 <5.00 U <0.157 U <2.00 U	6.15 6.02 0.72 0.30 129 6.68 5.39 0.77	8.50 8.3 9.7 3.90 77.8 10.2 8.0 10.30 <5.00 U <2.00 U <2.00 U <2.00 U	0.089 0.087 0.101 0.041 0.811 0.106 0.083 0.107 J J J	173 122 10 675 165 170 128 <2.00 U <0.248 U <2.00 U	2.77 1.95 0.16 10.8 2.64 2.72 2.05	64 110 7 17.6 101 71 100.0 NA <0.324 U <0.324 U <0.398 U	2.27 3.92 0.26 0.627 3.60 2.51 3.57	107 130 75 1.82 113 132 120 NA <0.303 <0.303	U U U	3.56 4.32 2.49 0.061 3.76 4.39 3.99
MW-22-DUP	21-Apr-16 21-Sep-16 21-Feb-17 12-Sep-17 22-May-18 6-Nov-18 21-Apr-16 21-Feb-17 12-Sep-17 22-May-18 3-Jun-15 1-Dec-15 20-Apr-16 21-Sep-16 21-Sep-16 21-Sep-17	639 <2.00 <1.00 <1.00 <1.00 <1.00 <1.00 <1.00 <1.00 <1.00 <1.00 <1.00 <1.00 <1.00 <1.00 <1.00 <1.00 <1.00 <1.00 <1.00 <1.00 <1.00 <1.00 <1.00 <1.00 <1.00 <1.00 <1.00 <1.00 <1.00 <1.00 <1.00 <1.00 <1.00 <1.00 <1.00 <1.00 <1.00 <1.00 <1.00	3.85 U U U U 0.06 10.13 U	<2.00 U 1.50 6.50 1.00 2.70 336 1.80 6.40 1.00 <5.00 U <2.00 U <0.138 U <1.00 U	0.011 0.049 0.008 0.021 2.56 0.014 0.049 0.008 0.008	596 584 69.9 29.3 12,500 E 648 523 74.2 <5.00 U <2.00 U <1.00 U <1.00 U	6.15 6.02 0.72 0.30 2 129 6.68 5.39 0.77 1 1 1	8.50 8.3 9.7 3.90 77.8 10.2 8.0 10.30 <<5.00 U <0.192 U <1.00 U <1.00 U <1.00 U	0.089 0.087 0.101 0.041 0.811 0.106 0.083 0.107 J J J J J	173 122 10 675 165 170 128 <2.00 U <2.00 U <0.248 U <1.00 U <1.00 U	2.77 1.95 0.16 10.8 2.64 2.72 2.05	64 110 7 17.6 101 71 100.0 NA <0.324 U <0.324 U <0.398 U <0.398 U	2.27 3.92 0.26 0.627 3.60 2.51 3.57	107 130 75 1.82 113 132 120 NA <0.303 <0.303 <0.573 <0.573	U U U U	3.56 4.32 2.49 0.061 3.76 4.39 3.99
MW-22-DUP	21-Apr-16 21-Sep-16 21-Feb-17 12-Sep-17 22-May-18 6-Nov-18 21-Apr-16 21-Feb-17 12-Sep-17 22-May-18 3-Jun-15 1-Dec-15 20-Apr-16 21-Sep-16 20-Feb-17	639 <2.00 <1.00 <1.00 <1.00 <1.00 <1.00 <1.00 <1.00 <1.00 <1.00 <1.00 <2.00 <2.00 <0.333 2.10 2.70	3.85 U U U U 0.06 10.13 U U J 0.006 U U J 0.006 U U 0.013 0.016	<2.00 U 1.50 6.50 1.00 2.70 336 1.80 6.40 1.00 <5.00 U <2.00 U <0.138 U <1.00 U <1.00 U <1.00 U	0.011 0.049 0.008 0.008 0.014 0.049 0.008 0.008 0.008 0.008 0.008 0.008 0.008 0.008 0.008 0.008 0.008 0.008 0.008 0.008	596 584 69.9 29.3 12,500 E 648 523 74.2 <5.00 U <2.00 U <2.00 U <2.00 U	6.15 6.02 0.72 0.30 129 6.68 5.39 0.77 J -	8.50 8.3 9.7 3.90 77.8 10.2 8.0 10.30 <5.00	0.089 0.087 0.101 0.041 0.811 0.106 0.083 0.107 J	173 122 10 675 165 170 128 <2.00 U <0.248 U <2.00 U <1.00 U <1.00 U	2.77 1.95 0.16 10.8 2.64 2.72 2.05	64 110 7 17.6 101 71 100.0 NA <0.324 U <0.324 U <0.324 U <0.398 U	2.27 3.92 0.26 0.627 3.60 2.51 3.57	107 130 75 1.82 113 132 120 NA <0.303 <0.573 <0.573	U U U	3.56 4.32 2.49 0.061 3.76 4.39 3.99
MW-22-DUP	21-Apr-16 21-Sep-16 21-Feb-17 12-Sep-17 22-May-18 6-Nov-18 21-Apr-16 21-Feb-17 12-Sep-17 22-May-18 3-Jun-15 1-Dec-15 20-Apr-16 21-Sep-16 21-Sep-17 21-May-18 21-Sep-17 21-May-18	639 <2.00 <1.00 <1.00 <1.00 <1.00 <1.00 <1.00 <1.00 <1.00 <1.00 <1.00 <1.00 <1.00 <1.00 <1.00 <1.00 <1.00 <1.00 <1.00 <1.00 <1.00 <1.00 <2.00 <0.333 2.10 2.70 <1.00 1.80 1.40 <2.00 <1.40 <1.40 <2.00	3.85 U U U U 0.06 10.13 U	<2.00 U 1.50 6.50 1.00 2.70 336 1.80 6.40 1.00 <5.00 U <2.00 U <1.00 U <1.00 U <1.00 U <1.00 U <2.00 U	0.011 0.049 0.008 0.021 2.56 0.014 0.049 0.008	596 584 69.9 29.3 12,500 E 648 523 74.2 <5.00 U <2.00 U <1.00 U <1.00 U <1.00 U <2.00 U <2.00 U	6.15 6.02 0.72 0.30 129 6.68 5.39 0.77 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	8.50 8.3 9.7 3.90 77.8 10.2 8.0 10.30 <5.00 U <2.00 U <1.00 U <1.00 U <1.00 U <2.00 U <2.00 U	0.089 0.087 0.101 0.041 0.811 0.106 0.083 0.107 J	173 122 10 675 165 170 128 <2.00 U <2.00 U <1.00 U <1.00 U <1.00 U <1.00 U <2.00 U	2.77 1.95 0.16 10.8 2.64 2.72 2.05	64 110 7 17.6 101 71 100.0 NA <0.324 U <0.324 U <0.328 U <0.398 U <0.398 U <0.398 U <1.00 U <1.00 U	2.27 3.92 0.26 0.627 3.60 2.51 3.57	107 130 75 1.82 113 132 120 NA <0.303 <0.303 <0.573 <0.573 <0.573 <0.573 <0.573	U U U U U	3.56 4.32 2.49 0.061 3.76 4.39 3.99
MW-22-DUP	21-Apr-16 21-Sep-16 21-Feb-17 12-Sep-17 12-Sep-17 22-May-18 6-Nov-18 21-Apr-16 21-Feb-17 12-Sep-17 22-May-18 3-Jun-15 1-Dec-15 20-Apr-16 21-Sep-16 20-Feb-17 12-Sep-17 21-May-18 5-Nov-18 21-Sep-16 3-Jun-15 1-Dec-15	639 <2.00 <1.00 <1.00 <1.00 <1.00 <1.00 <1.00 <1.00 <1.00 <1.00 <1.00 <1.00 <1.00 <1.00 <1.00 <2.00 <2.00 <2.10 <1.00 <1.00 <2.00 <2.00 <2.00 <1.00 <1.00 <1.00 <2.00 <2.00 <2.00 <2.00 <2.00 <2.00 <2.00	3.85 U U U U 0.06 10.13 U	<2.00 U 1.50 6.50 1.00 2.70 336 1.80 6.40 1.00 <5.00 U <2.00 U <0.138 U <2.00 U <1.00 U <1.00 U <1.00 U <1.00 U <2.00 U	0.011 0.049 0.008 0.021 2.56 0.014 0.049 0.008 1	596 584 69.9 29.3 12,500 E 648 523 74.2 <5.00 U <0.157 U <0.100 U <1.00 U	6.15 6.02 0.72 0.30 6.129 6.68 5.39 0.77 J	8.50 8.3 9.7 3.90 77.8 10.2 8.0 10.30 < 5.00 U 2.00 U 1.00 U 1.00 U 1.00 U 2.00 U	0.089 0.087 0.101 0.041 0.811 0.106 0.083 0.107 J	173 122 10 675 165 170 128 <2.00 U <2.00 U <1.00 U <1.00 U <1.00 U <2.00 U <2.00 U <2.00 U <1.00 U <1.00 U <1.00 U <1.00 U <2.00 U <2.00 U	2.77 1.95 0.16 10.8 2.64 2.72 2.05	64 110 7 17.6 101 71 100.0 NA <0.324 U <0.324 U <0.398 U <0.398 U <0.398 U <1.00 U <1.00 U <1.100 U NA 1.19 J	2.27 3.92 0.26 0.627 3.60 2.51 3.57 0.042	107 130 75 1.82 113 132 120 NA <0.303 <0.573 <0.573 <0.573 <0.573 <0.573 <0.573 <0.573 <0.573	U U U U U U U	3.56 4.32 2.49 0.061 3.76 4.39 3.99
MW-22-DUP	21-Apr-16 21-Sep-16 21-Feb-17 12-Sep-17 22-May-18 6-Nov-18 21-Apr-16 21-Feb-17 12-Sep-17 22-May-18 3-Jun-15 1-Dec-15 20-Apr-16 21-Sep-17 21-May-18 21-Sep-17 21-May-18 21-Sep-16 20-Feb-17 12-Sep-17 21-May-18 21-Sep-16 3-Jun-15 1-Dec-15 20-Apr-16 3-Jun-15 1-Dec-15	639 <2.00 <1.00 <1.00 <1.00 <1.00 <1.00 <1.00 <1.00 <1.00 <1.00 <1.00 <1.00 <1.00 <1.00 <1.00 <1.00 <2.00 <2.00 <2.00 <1.00 <1.00 <1.00 <2.00 <2.00 <2.00 <2.00 <2.00 <3.333 <3.00 <4.00 <4.00 <3.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <4.00 <	3.85 U	<2.00 U 1.50 6.50 1.00 2.70 336 1.80 6.40 1.00 <5.00 U <2.00 U <1.00 U <1.00 U <1.00 U <1.00 U <2.00 U <1.00 U <1.00 U <2.00 U	0.011 0.049 0.008 0.021 2.56 0.014 0.049 0.008 1	596 584 69.9 29.3 12,500 E 648 523 74.2 <5.00 U <2.00 U <1.00 U <1.00 U <1.00 U <2.00 U <2.00 U <1.00 U <1.00 U <1.00 U <2.00 U <2.00 U <2.00 U <1.00 U <1.00 U <1.00 U <1.00 U <1.00 U <2.00 U <2.00 U <2.00 U <2.00 U	6.15 6.02 0.72 0.30 129 6.68 5.39 0.77 1 -	8.50 8.3 9.7 3.90 77.8 10.2 8.0 10.30 <5.00 U <2.00 U <1.00 U <1.00 U <1.00 U <2.00 U <2.00 U <1.00 U <1.00 U <2.00 U	0.089 0.087 0.101 0.041 0.811 0.106 0.083 0.107 J	173 122 10 675 165 170 128 <2.00 U <1.00 U <1.00 U <1.00 U <1.00 U <2.00 U <2.00 U <2.00 U <2.00 U <1.00 U <1.00 U <1.00 U <2.00 U	2.77 1.95 0.16 10.8 2.64 2.72 2.05	64 110 7 17.6 101 71 100.0 NA <0.324 U <0.324 U <0.398 U <0.398 U <0.398 U <1.00 U <1.00 U <0.398 U <1.10 U <1.10 U <0.398 U <0.398 U <1.00 U <0.398 U <1.00 U <0.398 U <1.00 U <0.398 U <0.398 U <1.00 U <0.398 U	2.27 3.92 0.26 0.627 3.60 2.51 3.57 0.042 0.016	107 130 75 1.82 113 132 120 NA <0.303 <0.303 <0.573 <0.573 <0.573 <0.573 <0.573 <0.573 <0.573 <0.573 <0.303 <0.303 <0.303 <0.573 <0.573 <0.573 <0.573 <0.573 <0.573 <0.573 <0.573 <0.573 <0.573 <0.573 <0.573 <0.573 <0.573 <0.573 <0.573 <0.573 <0.573 <0.573 <0.573 <0.573 <0.573 <0.573 <0.573 <0.573 <0.573 <0.573 <0.573 <0.573 <0.573 <0.573 <0.573 <0.573 <0.573 <0.573 <0.573 <0.573 <0.573 <0.573 <0.573 <0.573 <0.573 <0.573 <0.573 <0.573 <0.573 <0.573 <0.573 <0.573 <0.573 <0.573 <0.573 <0.573 <0.573 <0.573 <0.573 <0.573 <0.573 <0.573 <0.573 <0.573 <0.573 <0.573 <0.573 <0.573 <0.573 <0.573 <0.573 <0.573 <0.573 <0.573 <0.573 <0.573 <0.573 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MW-22-DUP MW-23 MW-23-DUP	21-Apr-16 21-Sep-16 21-Feb-17 12-Sep-17 12-Sep-17 22-May-18 6-Nov-18 21-Apr-16 21-Feb-17 12-Sep-17 22-May-18 3-Jun-15 1-Dec-15 20-Apr-16 21-Sep-16 20-Feb-17 12-Sep-17 21-May-18 5-Nov-18 21-Sep-16 3-Jun-15 1-Dec-15 20-Apr-16 21-Sep-16 21-Sep-17	639 <2.00 <1.00 <1.00 <1.00 <1.00 <1.00 <1.00 <1.00 <1.00 <1.00 <1.00 <1.00 <1.00 <1.00 <2.00 <2.00 <2.00 <1.00 1.80 1.40 <2.00 <2.00 <2.00 <1.00 <1.00 <1.00 <1.00 <1.00 <1.00 <1.00 <1.00 <1.00 <1.00 <1.00 <1.00 <1.00 <1.00 <1.00 <1.00	3.85 U	<2.00 U 1.50 6.50 1.00 2.70 336 1.80 6.40 1.00 <5.00 U <2.00 U <0.138 U <1.00 U <1.00 U <1.00 U <1.00 U <2.00 U <1.00 U	0.011 0.049 0.008 0.021 2.56 0.014 0.049 0.008 1	596 584 69.9 29.3 12,500 E 648 523 74.2 <5.00 U <2.00 U <1.00 U <1.00 U <1.00 U <2.00 U <2.00 U <1.00 U	6.15 6.02 0.72 0.30 6.129 6.68 5.39 0.77 J	8.50 8.3 9.7 3.90 77.8 10.2 8.0 10.30 <	0.089 0.087 0.081 0.081 0.041 0.811 0.106 0.083 0.107 J	173 122 10 675 165 170 128 <2.00 U <2.00 U <1.00 U <1.00 U <1.00 U <2.00 U <2.00 U <1.00 U <1.00 U <1.00 U <1.00 U <1.00 U <1.00 U <2.00 U <2.00 U <1.00 U	2.77 1.95 0.16 10.8 2.64 2.72 2.05	64 110 7 17.6 101 71 100.0 NA <0.324 U <0.398 U <0.398 U <0.398 U <1.00 U <1.00 U <1.00 U <0.398 U <1.01 U <0.398 U	2.27 3.92 0.26 0.627 3.60 2.51 3.57 0.042 0.016	107 130 155 1.82 113 132 120 NA <0.303 <0.573 <0.573 <0.573 <0.573 <0.573 <0.573 <0.573 <0.573 <0.573 <0.573 <0.573 <0.573 <0.573 <0.573 <0.573 <0.573 <0.573 <0.573 <0.573 <0.573 <0.573 <0.573 <0.573 <0.573 <0.573		3.56 4.32 2.49 0.061 3.76 4.39 3.99
MW-22-DUP MW-23 MW-23-DUP	21-Apr-16 21-Sep-16 21-Feb-17 12-Sep-17 22-May-18 6-Nov-18 21-Apr-16 21-Feb-17 12-Sep-17 22-May-18 3-Jun-15 1-Dec-15 20-Apr-16 21-Sep-16 21-Sep-17 21-May-18 5-Nov-18 21-Sep-16 3-Jun-15 1-Dec-15 20-Apr-16 21-Feb-17 12-Sep-17 21-May-18 5-Nov-18	639 <2.00 <1.00 <1.00 <1.00 <1.00 <1.00 <1.00 <1.00 <1.00 <1.00 <1.00 <1.00 <1.00 <1.00 <1.00 <2.00 <2.00 <2.00 <1.00 <1.00 <1.00 <1.00 <1.00 <1.00 <1.00 <1.00 <1.00 <1.00 <1.00 <1.00 <1.00 <1.00 <1.00 <1.00 <1.00 <1.00 <1.00 <1.00	3.85 U	<2.00 U 1.50 6.50 1.00 2.70 336 1.80 6.40 1.00 <2.00 U <2.00 U <1.00 U <1.00 U <1.00 U <1.00 U <2.00 U <1.00 U <1.00 U <1.00 U <2.00 U <1.00 U	0.011 0.049 0.008 0.021 2.56 0.014 0.049 0.008 1	596 584 69.9 29.3 12,500 E 648 523 74.2 <5.00 U <2.00 U <1.00 U <1.00 U <1.00 U <2.00 U <2.00 U <1.00 U	6.15 6.02 0.72 0.30 129 6.68 5.39 0.77 1 -	8.50 8.3 9.7 3.90 77.8 10.2 8.0 10.30 <5.00 U <2.00 U <1.00 U <1.00 U <2.00 U <2.00 U <1.00 U <1.00 U <2.00 U <1.00 U <1.00 U <2.00 U <1.00 U	0.089 0.087 0.101 0.041 0.811 0.106 0.083 0.107 J	173 122 10 675 165 170 128 <2.00 U <2.00 U <1.00 U <1.00 U <2.00 U <2.00 U <1.00 U <1.00 U <1.00 U <2.00 U <1.00 U	2.77 1.95 0.16 10.8 2.64 2.72 2.05	64 110 7 17.6 101 71 100.0 NA <0.324 U <0.324 U <0.398 U <0.398 U <0.398 U <1.00 U <1.00 U <1.00 U <0.398 U <0.398 U <0.398 U <0.398 U <0.398 U <0.443 J <0.398 U <0.443 U <0.444 U U U U U U U U U U U U U U U U U U	2.27 3.92 0.26 0.627 3.60 2.51 3.57 0.016	107 130 152 113 132 120 NA <0.303 <0.303 <0.573 <0.573 <0.573 <0.573 NA <0.303 <0.303 <0.573 <0.573 <0.573 <0.573 <0.573 <0.573 <0.573 <0.573 <0.573 <0.573 <0.573 <0.573 <0.573 <0.573 <0.573 <0.573 <0.573 <0.573 <0.573 <0.573 <0.573 <0.573 <0.573 <0.573 <0.573 <0.573 <0.573	U U U U U U U U U U U U U U U U U U U	3.56 4.32 2.49 0.061 3.76 4.39 3.99
MW-22-DUP MW-23 MW-23-DUP	21-Apr-16 21-Sep-16 21-Feb-17 12-Sep-17 22-May-18 6-Nov-18 21-Apr-16 21-Feb-17 12-Sep-17 12-Sep-17 12-Sep-17 12-Sep-17 12-Sep-17 12-Sep-16 21-Sep-16 21-Sep-16 3-Jun-15 1-Dec-15 20-Apr-16 21-Sep-16 3-Jun-15 1-Dec-15 20-Apr-16 21-Sep-16 21-Sep-17 22-May-18	639 <2.00 <1.00 <1.00 <1.00 <1.00 <1.00 <1.00 <1.00 <1.00 <1.00 <1.00 <1.00 <1.00 <1.00 <1.00 <1.00 <2.00 <0.333 2.10 2.70 <1.00 1.80 1.40 <2.00 <2.00 <1.00 <1.00 <1.00 <1.00 <1.00 <1.00 <1.00 <1.00 <1.00 <1.00 <1.00 <1.00 <1.00 <1.00 <1.00 <1.00 <1.00 <1.00 <1.00 <1.00 <1.00 <1.00 <1.00 <1.00 <1.00 <1.00 <1.00 <1.00 <1.00 <1.00 <1.00 <1.00 <1.00 <1.00 <1.00 <1.00 <1.00 <1.00 <1.00 <1.00 <1.00 <1.00 <1.00 <1.00 <1.00 <1.00 <1.00 <1.00 <1.00 <1.00 <1.00 <1.00 <1.00 <1.00 <1.00 <1.00 <1.00 <1.00 <1.00 <1.00	3.85 U	<2.00 U 1.50 1.50 1.00 2.70 336 1.80 6.40 1.00 <5.00 U <2.00 U <2.00 U <1.00 U <1.00 U <1.00 U <1.00 U <2.00 U <2.00 U <1.00 U <2.00 U <1.00 U <	0.011 0.049 0.008 0.021 2.56 0.014 0.049 0.008 1	596 584 69.9 29.3 12,500 E 648 523 74.2 <5.00 U <2.00 U <1.00 U <1.00 U <1.00 U <2.00 U <2.00 U <1.00 U	6.15 6.02 0.72 0.30 6.18 6.68 6.68 6.77 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7	8.50 8.3 9.7 3.90 77.8 10.2 8.0 10.30 <5.00 U <0.192 U <1.00 U <1.00 U <1.00 U <2.00 U <2.00 U <1.00 U	0.089 0.087 0.101 0.041 0.106 0.083 0.107 J	173 122 10 675 165 170 128 <2.00 U <2.00 U <1.00 U <1.00 U <1.00 U <2.00 U <1.00 U	2.77 1.95 0.16 10.8 2.64 2.72 2.05	64 110 7 17.6 101 71 100.0 NA <0.324 U <0.324 U <0.398 U <0.398 U <1.00 U <1.00 U <1.00 U <0.398 U <1.01 U <0.398 U <1.02 U <1.00 U <0.398 U <0.398 U <0.398 U <1.00 U <0.398 U U 0.413 U 0.443 J 0.443 J 0.398 U <0.398 U	2.27 3.92 0.26 0.627 3.60 2.51 3.57 0.042 0.016	107 130 130 75 1.82 113 132 120 NA <0.303 <0.303 <0.573 <0.573 <0.573 <0.573 NA <0.303 <0.303 <0.573 <0.573 <0.573 <0.573 <0.573 <0.573 <0.573 <0.573 <0.573 <0.573 <0.573 <0.573 <0.573 <0.573 <0.573 <0.573 <0.573 <0.573 <0.573 <0.573 <0.573 <0.573 <0.573 <0.573 <0.573 <0.573 <0.573 <0.573	U U U U U U U U U U U U U U U U U U U	3.56 4.32 2.49 0.061 3.76 4.39 3.99

NOTES:

* = Exceeds acceptable limits.

DCE = Dichloroethene.

E = Result exceeded calibration range.

F1 = MS and/or MSD Recovery is outside acceptance limits.

F2 = MS/MSD RPD exceeds control limits.

J = Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

P = The %RPD between the primary and confirmation column/detector is >40%. The higher value has been reported.

MDL = Method Detection Limit.

µg/L = Micrograms per liter.

µM/L = Micrograms per liter.

µW-25 was dry during the pre-injection sampling event and was not sampled.

MS/MSD = Matrix Spike/Matrix Spike Duplicate.

NS = Not Sampled.

PCE = Tetrachloroethene.

RPD = Relative Percent Difference.

RL = Reporting Limit.

TCE = Trichloroethene.

U = Indicates the analyte was analyzed for but not detected.

Jones Road Ground Water Plume Superfund Site Harris County, Texas

TABLE 6A. - SUMMARY OF INJECTION MECHANICS (Initial Injection)

Well Identification	Date of Injection	Start Time	End Time	Batch Number	Volume of EHC®-L mixture (gal)	Volume of Water (gal)	Total Volume Injected (cal)	Injection Rate (gpm)	Injection Pressure (psi)
P-01	1/29/2016	15:18	16:35	Batch Number	100	400	505	7	70
P-02	1/30/2016	10:04	11:16		100	400	505	7	70
P-03	1/29/2016	13:50	15:07		100	400	505	7	70
P-04	1/29/2016	16:05	17:17		100	400	505	7	80
P-05	1/29/2016	13:13	14:25		100	400	505	7	80
		8:30	8:33		4	16	20	7	70
P-06	1/29/2016	8:40	8:44		10	40	50	5	50
P-07	1/29/2016	9:53	12:14		186	745	940	7	75
		13:20	14:15		65	259	327	7	75
P-08	1/29/2016	14:15	14:54		35	141	178	5	65
P-09	1/29/2016	8:20	9:31		100	400	505	7	65
		13:45	14:15		37	148	187	7	80
P-10	1/29/2016	14:15	15:26		63	252	318	5	75
P-11	1/29/2016	14:35	15:56		100	400	505	7	75
P-12	1/29/2016	15:45	16:58		100	400	505	7	75
P-13	1/30/2016	9:25	10:43		100	400	505	7	75
P-14	1/28/2016	8:45	9:59	A	100	400	505	7	95
P-15	1/28/2016	10:10	11:30		100	400	505	7	75
		13:00	13:02		0	0	0	0	0
P-16	1/28/2016	16:20	17:38		100	400	505	7	60
P-17	1/28/2016	8:45	10:03		100	400	505	7	65
P-18	1/28/2016	12:40	13:52		100	400	505	7	75
P-19	1/29/2016	8:15	9:28		100	400	505	7	70
P-20	1/28/2016	10:08	11:23		100	400	505.0	7	60
P-21	1/30/2016	9:22	10:35		100	400	505	7	95
P-22	1/30/2016	10:06	11:18		100	400	505	7	70
		9:36	10:03		39	156	197	7	70
P-23	1/28/2016	10:03	11:13		61	244	308	5	65
P-24	1/28/2016	16:10	17:28		100	400	505	7	70
P-25	1/28/2016	13:41	14:50		100	400	505	7	65
P-26	1/29/2016	9:00	10:21		100	400	505	7	65
P-27	1/29/2016	8:25	9:35		100	400	505	7	70
P-28	1/28/2016	9:27	10:43		100	400	505	7	80
P-29	1/27/2016	15:30	17:45		100	850	955	7	65
P-30	1/30/2016	12:45	15:15		100	850	955	7	75
P-31	1/27/2016	14:50	17:06		100	850	955	7	60
P-32	1/30/2016	13:15	15:42		100	850	955	7	80
P-33	1/27/2016	10:10	12:15		100	850	955	7	60
P-34	1/27/2016	10:40	12:53	В	100	850	955	7	70
P-35	1/30/2016	12:43	15:11		100	850	955	7	90
P-36	1/30/2016	13:09	15:35		100	850	955	7	70
P-37	1/31/2016	8:35	10:58		100	850	955	7	80
P-38	1/31/2016	8:00	10:25		100	850	955	7	70
P-39	1/26/2016	15:45	18:17		100	850	955	5.5	80
P-40	2/1/2016	8:05	10:31		100	850	955	7	70
P-41	1/26/2016	15:29	17:45		100	850	955	7	50
P-42	1/31/2016	12:15	14:28		100	850	955	7	65
P-43	1/26/2016	15:00	17:22		100	850	955	7	10
1 13	1/20/2010	12:50	15:16		163	850	1033	7	70
P-44	2/1/2016	15:30	17:30		103	830	840	7	70
	1	12:45	15:11		163	850	1033	7	65
P-45	2/1/2016						630	7	65
P-46	2/1/2016	15:30 8:15	17:00						
P-46 P-47	2/1/2016	. x.ı.	10.40			050	055	7	70
	1/21/2017		10:42		100	850 850	955 955	7	70
	1/31/2016	11:50	14:09		100	850	955	7	70
P-48	1/27/2016	11:50 14:00	14:09 16:22		100 100	850 850	955 955	7	70 50
		11:50 14:00 8:10	14:09 16:22 10:37		100 100 100	850 850 850	955 955 955	7 7 7	70 50 75
P-48	1/27/2016	11:50 14:00 8:10 12:40	14:09 16:22 10:37 15:06		100 100 100 100 163	850 850 850 850	955 955 955 1033	7 7 7 7	70 50 75 60
P-48 P-49 P-50	1/27/2016 2/1/2016 2/1/2016	11:50 14:00 8:10 12:40 15:30	14:09 16:22 10:37 15:06 17:00		100 100 100 100 163	850 850 850 850	955 955 955 1033 630	7 7 7 7 7	70 50 75 60
P-48 P-49 P-50 P-51	1/27/2016 2/1/2016 2/1/2016 1/31/2016	11:50 14:00 8:10 12:40 15:30 12:17	14:09 16:22 10:37 15:06 17:00 14:30		100 100 100 163 100	850 850 850 850 850 850	955 955 955 1033 630 955	7 7 7 7 7	70 50 75 60 60 65
P-48 P-49 P-50	1/27/2016 2/1/2016 2/1/2016	11:50 14:00 8:10 12:40 15:30 12:17 9:35	14:09 16:22 10:37 15:06 17:00 14:30 11:52	В	100 100 100 163 100	850 850 850 850 850 850	955 955 955 1033 630 955	7 7 7 7 7 7	70 50 75 60 60 65
P-48 P-49 P-50 P-51 P-52	1/27/2016 2/1/2016 2/1/2016 1/31/2016 1/27/2016	11:50 14:00 8:10 12:40 15:30 12:17 9:35 10:40	14:09 16:22 10:37 15:06 17:00 14:30 11:52 11:30	В	100 100 100 163 100 100	850 850 850 850 850 850 267	955 955 955 1033 630 955 955 955	7 7 7 7 7 7 7 7 5	70 50 75 60 60 65 65
P-48 P-49 P-50 P-51 P-52 P-53	1/27/2016 2/1/2016 2/1/2016 1/31/2016 1/27/2016 1/26/2016	11:50 14:00 8:10 12:40 15:30 12:17 9:35 10:40 11:30	14:09 16:22 10:37 15:06 17:00 14:30 11:52 11:30 13:12	В	100 100 100 163 100 100 31 69	850 850 850 850 850 850 267 583	955 955 955 1033 630 955 955 300 655	7 7 7 7 7 7 7 7 5 6.5	70 50 75 60 60 65 65 50 55
P-48 P-49 P-50 P-51 P-52	1/27/2016 2/1/2016 2/1/2016 1/31/2016 1/27/2016	11:50 14:00 8:10 12:40 15:30 12:17 9:35 10:40 11:30 8:00	14:09 16:22 10:37 15:06 17:00 14:30 11:52 11:30 13:12	В	100 100 100 163 100 100 31 69 100	850 850 850 850 850 850 267 583 850	955 955 955 1033 630 955 955 300 655 955	7 7 7 7 7 7 7 7 5 6.5	70 50 75 60 60 65 65 50 55 65
P-48 P-49 P-50 P-51 P-52 P-53 P-54	1/27/2016 2/1/2016 2/1/2016 2/1/2016 1/31/2016 1/27/2016 1/26/2016 2/1/2016	11:50 14:00 8:10 12:40 15:30 12:17 9:35 10:40 11:30 8:00 9:30	14:09 16:22 10:37 15:06 17:00 14:30 11:52 11:30 13:12 10:26 11:30	В	100 100 100 163 100 100 100 31 69 100 70	850 850 850 850 850 850 267 583 850 596	955 955 955 1033 630 955 955 300 655 955 670	7 7 7 7 7 7 7 7 5 6.5	70 50 75 60 60 65 65 50 55 65 55
P-48 P-49 P-50 P-51 P-52 P-53 P-54 P-55	1/27/2016 2/1/2016 2/1/2016 1/31/2016 1/27/2016 1/26/2016 2/1/2016 1/26/2016	11:50 14:00 8:10 12:40 15:30 12:17 9:35 10:40 11:30 8:00 9:30 11:30	14:09 16:22 10:37 15:06 17:00 14:30 11:52 11:30 13:12 10:26 11:30 12:18	В	100 100 100 163 100 100 100 31 69 100 70 30	850 850 850 850 850 850 267 583 850 596	955 955 955 1033 630 955 955 300 655 955 670 285	7 7 7 7 7 7 7 7 5 6.5 7	70 50 75 60 60 65 65 50 55 65 57 70
P-48 P-49 P-50 P-51 P-52 P-53 P-54 P-55	1/27/2016 2/1/2016 2/1/2016 2/1/2016 1/31/2016 1/27/2016 1/26/2016 2/1/2016	11:50 14:00 8:10 12:40 15:30 12:17 9:35 10:40 11:30 8:00 9:30 11:30 8:30	14:09 16:22 10:37 15:06 17:00 14:30 11:52 11:30 13:12 10:26 11:30	В	100 100 100 100 163 100 100 31 69 100 70 30	850 850 850 850 850 850 267 583 850 596 254	955 955 955 1033 630 955 955 300 655 955 670 285 955	7 7 7 7 7 7 7 5 6.5 7	70 50 75 60 60 65 65 50 55 65 57 70
P-48 P-49 P-50 P-51 P-52 P-53 P-54 P-55	1/27/2016 2/1/2016 2/1/2016 1/31/2016 1/27/2016 1/26/2016 2/1/2016 1/26/2016	11:50 14:00 8:10 12:40 15:30 12:17 9:35 10:40 11:30 8:00 9:30 11:30	14:09 16:22 10:37 15:06 17:00 14:30 11:52 11:30 13:12 10:26 11:30 12:18	В	100 100 100 163 100 100 100 31 69 100 70 30	850 850 850 850 850 850 267 583 850 596	955 955 955 1033 630 955 955 300 655 955 670 285 955	7 7 7 7 7 7 7 7 5 6.5 7	70 50 75 60 60 65 65 50 55 65 55 70 70 60
P-48 P-49 P-50 P-51 P-52 P-53 P-54 P-55	1/27/2016 2/1/2016 2/1/2016 1/31/2016 1/27/2016 1/26/2016 2/1/2016 1/26/2016 1/31/2016	11:50 14:00 8:10 12:40 15:30 12:17 9:35 10:40 11:30 8:00 9:30 11:30 8:30	14:09 16:22 10:37 15:06 17:00 14:30 11:52 11:30 13:12 10:26 11:30 12:18 10:53	В	100 100 100 100 163 100 100 31 69 100 70 30	850 850 850 850 850 850 267 583 850 596 254	955 955 955 1033 630 955 955 300 655 955 670 285 955 955	7 7 7 7 7 7 7 5 6.5 7	70 50 75 60 60 65 65 50 55 65 57 70
P-48 P-49 P-50 P-51 P-52 P-53 P-54 P-55 P-56 P-57	1/27/2016 2/1/2016 2/1/2016 1/31/2016 1/27/2016 1/26/2016 2/1/2016 1/26/2016 1/31/2016 1/26/2016	11:50 14:00 8:10 12:40 15:30 12:17 9:35 10:40 11:30 8:00 9:30 11:30 8:30 14:36	14:09 16:22 10:37 15:06 17:00 14:30 11:52 11:30 13:12 10:26 11:30 12:18 10:53 17:16	В	100 100 100 100 163 100 100 31 69 100 70 30 100	850 850 850 850 850 850 267 583 850 596 254 850 850	955 955 955 1033 630 955 955 300 655 955 670 285 955	7 7 7 7 7 7 7 7 5 6.5 7 5	70 50 75 60 60 65 65 50 55 65 55 70 70 60
P-48 P-49 P-50 P-51 P-52 P-53 P-54 P-55 P-56 P-57 P-58	1/27/2016 2/1/2016 2/1/2016 1/31/2016 1/27/2016 1/26/2016 1/26/2016 1/31/2016 1/26/2016 1/31/2016 1/31/2016	11:50 14:00 8:10 12:40 15:30 12:17 9:35 10:40 11:30 8:00 9:30 11:30 8:30 14:36 11:45	14:09 16:22 10:37 15:06 17:00 14:30 11:52 11:30 13:12 10:26 11:30 12:18 10:53 17:16 14:06	В	100 100 100 100 163 100 100 100 31 69 100 70 30 100 100 100	850 850 850 850 850 850 267 583 850 596 254 850 850 850	955 955 955 1033 630 955 955 300 655 955 670 285 955 955	7 7 7 7 7 7 7 7 7 5 6.5 7 7 7 7 7 7 7	70 50 75 60 60 65 65 50 55 65 57 70 70 60 75
P-48 P-49 P-50 P-51 P-52 P-53 P-54 P-55 P-56 P-57 P-58 P-59 P-60	1/27/2016 2/1/2016 2/1/2016 1/31/2016 1/27/2016 1/26/2016 1/26/2016 1/26/2016 1/31/2016 1/26/2016 1/31/2016 1/27/2016 1/27/2016	11:50 14:00 8:10 12:40 15:30 12:17 9:35 10:40 11:30 8:00 9:30 11:30 8:30 14:36 11:45 13:53	14:09 16:22 10:37 15:06 17:00 14:30 11:52 11:30 13:12 10:26 11:30 12:18 10:53 17:16 14:06 16:15	В	100 100 100 100 163 100 100 100 31 69 100 70 30 100 100 100 100	850 850 850 850 850 850 850 267 583 850 596 254 850 850 850 850	955 955 955 1033 630 955 955 300 655 955 670 285 955 955 955	7 7 7 7 7 7 7 7 7 5 6.5 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7	70 50 75 60 60 65 65 50 55 65 57 70 70 60 75 80 80
P-48 P-49 P-50 P-51 P-52 P-53 P-54 P-55 P-56 P-57 P-58 P-59	1/27/2016 2/1/2016 2/1/2016 1/31/2016 1/27/2016 1/26/2016 2/1/2016 1/26/2016 1/31/2016 1/26/2016 1/31/2016 1/31/2016 1/27/2016	11:50 14:00 8:10 12:40 15:30 12:17 9:35 10:40 11:30 8:00 9:30 11:30 8:30 14:36 11:45 13:53 9:30 11:00	14:09 16:22 10:37 15:06 17:00 14:30 11:52 11:30 13:12 10:26 11:30 12:18 10:53 17:16 14:06 16:15 11:47 11:30	В	100 100 100 100 163 100 100 100 31 69 100 70 30 100 100 100 100 100 100 100 100	850 850 850 850 850 850 850 267 583 850 596 254 850 850 850 850	955 955 955 1033 630 955 955 300 655 955 670 285 955 955 955 955 955	7 7 7 7 7 7 7 7 7 5 6.5 7 7 7 7 7 7 5 5 7 7 7 7 7 7 7 7 7 7 7	70 50 75 60 60 65 65 50 55 65 57 70 70 60 75 80
P-48 P-49 P-50 P-51 P-52 P-53 P-54 P-55 P-56 P-57 P-58 P-59 P-60 P-61	1/27/2016 2/1/2016 2/1/2016 1/31/2016 1/27/2016 1/26/2016 1/26/2016 1/26/2016 1/31/2016 1/31/2016 1/27/2016 1/27/2016 1/27/2016 1/27/2016	11:50 14:00 8:10 12:40 15:30 12:17 9:35 10:40 11:30 8:00 9:30 11:30 8:30 14:36 11:45 13:53 9:30 11:00 11:30	14:09 16:22 10:37 15:06 17:00 14:30 11:52 11:30 13:12 10:26 11:30 12:18 10:53 17:16 14:06 16:15 11:47 11:30 13:37	В	100 100 100 100 163 100 100 100 31 69 100 70 30 100 100 100 100 100 100 100 100 100	850 850 850 850 850 850 850 267 583 850 596 254 850 850 850 850 850	955 955 955 955 1033 630 955 955 300 655 955 670 285 955 955 955 955 955 955 955 955 955 9	7 7 7 7 7 7 7 7 7 5 6.5 7 7 7 7 7 7 7 7 7 7 7 7 7	70 50 75 60 60 65 65 50 55 70 70 60 75 80 80 55 60
P-48 P-49 P-50 P-51 P-52 P-53 P-54 P-55 P-56 P-57 P-58 P-59 P-60 P-61 P-62	1/27/2016 2/1/2016 2/1/2016 1/31/2016 1/27/2016 1/26/2016 1/26/2016 1/26/2016 1/31/2016 1/26/2016 1/31/2016 1/27/2016 1/27/2016 1/27/2016 1/26/2016	11:50 14:00 8:10 12:40 15:30 12:17 9:35 10:40 11:30 8:00 9:30 11:30 8:30 14:36 11:45 13:53 9:30 11:00 11:30 7:57	14:09 16:22 10:37 15:06 17:00 14:30 11:52 11:30 13:12 10:26 11:30 12:18 10:53 17:16 14:06 16:15 11:47 11:30 13:37 10:22	В	100 100 100 100 163 100 100 100 31 69 100 70 30 100 100 100 100 100 100 100 16 84	850 850 850 850 850 850 850 267 583 850 596 254 850 850 850 850 850 850 850	955 955 955 955 1033 630 955 955 955 300 655 955 670 285 955 955 955 955 955 955 955 955 955 9	7 7 7 7 7 7 7 7 7 5 6.5 7 7 7 7 7 5 6.5 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7	70 50 75 60 60 60 65 55 55 70 70 60 75 80 80 55 60 70
P-48 P-49 P-50 P-51 P-52 P-53 P-54 P-55 P-56 P-57 P-58 P-59 P-60 P-61	1/27/2016 2/1/2016 2/1/2016 1/31/2016 1/27/2016 1/26/2016 1/26/2016 1/26/2016 1/31/2016 1/31/2016 1/27/2016 1/27/2016 1/27/2016 1/27/2016	11:50 14:00 8:10 12:40 15:30 12:17 9:35 10:40 11:30 8:00 9:30 11:30 8:30 14:36 11:45 13:53 9:30 11:00 11:30	14:09 16:22 10:37 15:06 17:00 14:30 11:52 11:30 13:12 10:26 11:30 12:18 10:53 17:16 14:06 16:15 11:47 11:30 13:37	В	100 100 100 100 163 100 100 100 31 69 100 70 30 100 100 100 100 100 100 100 100 100	850 850 850 850 850 850 850 267 583 850 596 254 850 850 850 850 850	955 955 955 955 1033 630 955 955 300 655 955 670 285 955 955 955 955 955 955 955 955 955 9	7 7 7 7 7 7 7 7 7 5 6.5 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7	70 50 75 60 60 65 65 55 65 70 70 60 75 80 80 55 60

gal = Gallons. gpm = Gallons per minute. psi = Pounds per square inch.

EA Engineering, Science, and Technology, Inc. PBC EA Project No. 14342.129 Revision: 01

TABLE 6B. - SUMMARY OF INJECTION MECHANICS (Hot Spot Treatment)

Well Identification	Date of Injection	Start Time	End Time	EHC®-L mixture (lbs)	Volume of Water (gal)	Total Volume Injected (gal)	Injection Rate (gpm)	Injection Pressure (psi)
IP-01	3/27/2018	8:09	11:30	37.50	679	755	9.13	75
IP-02	3/27/2018	8:10	11:20	37.50	679	754	9.8	70
IP-03	3/27/2018	8:11	12:47	37.50	679	754	6.45	75
IP-04	3/27/2018	8:11	12:55	37.50	679	754	6.01	92
IP-05	3/27/2018	10:08	15:48	37.50	302	377	1.78	160
IP-06	3/27/2018	10:08	11:47	37.50	302	378	6.35	60
P-07	3/27/2018	10:08	11:10	37.50	302	377	8.5	50
P-08	3/27/2018	11:30	13:30	37.50	302	377	0.96	100
P-09	3/27/2018	12:12	13:48	37.50	302	377	3.4	105
P-10	3/27/2018	14:00	14:41	37.50	302	377	8.45	70

NOTES:

gal = Gallons.

gpm = Gallons per minute. psi = Pounds per square inch.

 $\rm EA$ Engineering, Science, and Technology, Inc. PBC

TABLE 7. FIELD MEASUREMENT INDICATORS FOR REDUCTIVE DECHLORINATION

Sample Location/Well ID	Sample Date	pН	Dissolved Oxygen	ORP	Temperature	Methane	Nitrate Nitrite as N	Total Organic Carb
avorable for RDC:		5 < pH < 9	< 0.5 mg/L	<-100 mV	> 20 °C	< 0.5 μg/L	< 1 mg/L	> 20 mg/L
	3-Dec-15 22-Apr-16	<u> </u>	2FI		<u>↑</u>	4	+	1
	20-Sep-16	1	Ψ	†		4	1	•
MW-01	23-Feb-17	↑	↑	1	<u>+</u>	+	↑	*
	13-Sep-17 24-May-18	1	Ť	т •	<u>T</u>	+	<u>T</u>	Ŧ
	7-Nov-18	1	1	↑	1	4	1	•
	20-Sep-16 23-Feb-17					+	1	<u>↑</u>
	13-Sep-17					¥	1	*
	24-May-18					.₩.	1	•
MW-01-DUP	7-Nov-18	1	.	•	•	+	1	.
	3-Dec-15 22-Apr-16	<u>ተ</u>	*	*	<u> </u>	Ψ. Ψ	+	+
	20-Sep-16	+	Ψ.	3 9	1	•	1	1
MW-02	23-Feb-17	1	↑	N	↑	Ψ.	1	*
	13-Sep-17 23-May-18	<u>ተ</u>	↑	2 7	<u>↑</u>	+	<u>↑</u>	+
	7-Nov-18	4	^	त्र	1	4	•	•
	3-Dec-15					•	•	*
MW-02-DUP	22-Apr-16 23-May-18					+	<u>^</u>	<u>↑</u>
	3-Dec-15	1	3 7	•	1	*	į.	•
	22-Apr-16	4	Ψ.	Ψ.	Ť	Ψ.	•	*
MW-03	21-Sep-16 22-Feb-17	→	+	4	<u> </u>	+	+	+
IVI W -03	12-Sep-17	1	1	Ψ	1	¥.	1	*
	22-May-18	4	•	ঙ্গ		Ψ.		•
	6-Nov-18	1	<i>5</i> 1 <i>3</i> 1	<i>5</i> 1	1	4	1	+
	2-Dec-15 21-Apr-16	ተ	小	↑	<u> </u>	+	1	*
	22-Sep-16	+	•	Ψ.	4	4	1	+
MW-04	22-Feb-17	4	1	<i>3</i> 7	1	Ψ	1	•
	12-Sep-17 23-May-18	†	↑	2 9	<u> </u>	+	T	+
	6-Nov-18	1	1	т •	<u>T</u>	*	1	*
	2-Dec-15	1	N	N	1	Ψ.	Ψ.	Ψ.
	21-Apr-16	1	↑	4	1	+	1	↑
MW-05	21-Sep-16 22-Feb-17	+	*	*	<u>↑</u>	4	↑	*
05	13-Sep-17	4	271	•	个	Ψ.	•	Ψ.
	21-May-18	4	.	N	<u> </u>	Ψ.	•	.
	5-Nov-18 1-Dec-15	<u> </u>		<u>ज्ञ</u>	<u>↑</u>	4	<u>↑</u>	+
	21-Apr-16	1	<u> </u>	<i>5</i> 7	<u></u>	¥	1	1
	21-Sep-16					.₩	1	1
MW-06	21-Feb-17					+	1	↑
	11-Sep-17 22-May-18					¥.	T	-
	6-Nov-18					4	4	4
	1-Dec-15					Ψ.	1	*
	20-Apr-16 21-Sep-16					1	+	+
	20-Feb-17					•	1	•
	11-Sep-17					+	1	+
MW 07	22-May-18						<u> </u>	+
MW-07 MW-07-DUP	5-Nov-18 1-Dec-15						1	*
**	2-Dec-15	1	N	1	1	.₩.	1	1
	19-Apr-16	↑	↑	3 ₹	<u> </u>	+	<u>↑</u>	+++
	20-Sep-16 21-Feb-17	1	T	- 1	1	4	1	-
	13-Sep-17	1	^	Ψ.	1	4	1	+
MW-08	24-May-18					Ψ.	1	•
	2-Dec-15 21-Apr-16	<u>ተ</u>	+	+	<u>↑</u>	1	+	+
	22-Sep-16	*	į.	<u> </u>	1	1	•	į.
	23-Feb-17	•	<i>3</i> 7	+	1	1	•	+
	12-Sep-17 24-May-18	<u>↑</u>	Я Я	হয় হয়	<u>↑</u>	1	+	+
MW-09	5-Nov-18	1	1	57	1	*	*	Ť.
**	2-Dec-15					Ψ.	1	Ψ.
	22-Apr-16	1	↑	3N 3N	1	+	1	+
	22-Sep-16 21-Feb-17	<u>ተ</u>	1	3N	<u> </u>	4	<u>↑</u>	↑
	12-Sep-17	1	1	3 7	1	Ψ	1	+
	24-May-18					Ψ.		1
MW-20	6-Nov-18 1-Dec-15	1	 37	-		4	<u>↑</u>	+
	1-Dec-15 22-Apr-16	*	ተ	Ψ.	4	Ψ.	•	Ψ.
	22-Sep-16	^	Ψ	•	1	Ψ.	+	.
	22-Feb-17 13-Sep-17	介	<u>ተ</u>	्रज्ञ ज्ञ	<u> </u>	+	*	+
	23-May-18				<u>T</u>	¥	T	Ţ.
MW-21	7-Nov-18	4	1	ঞ	1	Ψ	+	+
	30-Nov-15	1	<i>₹</i> 7	, ₩,	<u>↑</u>	+	+	+
	21-Apr-16 21-Sep-16	<u>^</u>	T		т 	4	小	+
	21-Feb-17					Ψ.	1	Ψ.
	12-Sep-17	4	*	39	个	4	1	Ψ
MW-22	22-May-18 6-Nov-18					+	<u>↑</u>	+
1V1 VV - ∠ ∠	21-Apr-16					4	1	<u> </u>
	21-Feb-17					+	1	+
MW 22 DID	12-Sep-17					+	<u>^</u>	++
MW-22-DUP	22-May-18 1-Dec-15	<u></u>		<u></u>	<u>+</u>	1	T	+
	20-Apr-16	4	†	Ψ.	1	1	1	+
	21-Sep-16	+	Ψ	•	1	1	•	Ψ.
	20-Feb-17	1	↑	57I 57I	1	1	++	++
	12-Sep-17 21-May-18		31 31	37 37	<u> </u>	т •	*	*
MW-23	5-Nov-18	4	A	39	1	4	•	+
	1-Dec-15	1	Ψ	Ψ	1	1	1	Ψ
	20-Apr-16 21-Sep-16	†	↑	+ +	1	+	↑	+
	21-Sep-16 21-Feb-17	1	3 7	¥	1	1	*	¥
F	12-Sep-17	4	<i>5</i> 1	<i>5</i> 11	1	1		+
		1	37	29	1	+	1	+
MW-24	21-May-18 6-Nov-18	4	4	3 71	1	4	1	•

ATTACHMENT A EHC-L® MANUFACTURER'S INFORMATION





Introduction

EHC[®] Liquid amendment is a cold-water soluble formulation specially designed to be emplaced via existing wells and/or hydraulic injection networks for the treatment of a wide range of groundwater contaminants. EHC Liquid is delivered as two components that are mixed together on site. The first component, a 25% liquid emulsion of foodgrade lecithin, is provided in 55-USG drums containing 50 USG of emulsion. The second component (powdered mix) is a food-grade organo-iron compound. The two components are proportioned so that 24.5 lbs of powdered mix is required for each 50 USG of liquid portion. This document provides standard operating procedures for preparation of diluted EHC Liquid for injection.





Packaging

Part 1

Liquid emulsion delivered in 55-USG drums, filled with 50 USG / 420 lbs per drum (190 L / 190 Kg)

Part 2

Water soluble powder with the organo-iron compound in 24.5 lb bags (11.1 Kg)

EHC Liquid Injection Volumes and Dilutions

Depending on the application method, between 10% and 100% of the <u>effective</u> porosity is normally targeted during EHC Liquid injection, with a higher percent pore fill normally targeted during low-flow injections into wells and injection networks. This is in contrast to applications via direct push technology where normally around 10 to 15% of effective porosity is targeted. To facilitate the desired injection volume, the components are diluted in the field. Table 1 shows examples of mixing recipes for a 55-USG drum of liquid component in US and metric.

Table 1: EHC Liquid dilutions and corresponding concentration

Di	3-fold	5-fold	10-fold	25-fold			
Volume of emulsion per drum (USG)		5	50				
Mass dry components (lbs)		24.5					
Volume water (USG)		100	200	450	1200		
Resulting total volume (USG)		150	250	500	1250		
Resulting EHC Liquid concentration (wt%)	10.5%	6.3%	3.2%	1.3%			





MIXING GUIDELINES

	3-fold	5-fold	10-fold	25-fold			
Volume EHC Liquid emulsion per drum (L)	190						
Mass dry components (Kg)		11.1					
Volume water (L)		380	760	1710	4560		
Resulting total volume (L)	570	950	1900	4750			
Resulting EHC Liquid concentration (wt%)	10.5%	6.3%	3.2%	1.3%			

General Mixing Procedures

Proportioning can be varied to accommodate mixing tank size. The general mixing procedure is:

Diluted EHC Liquid Component + Powdered Mix

- Fill mixing tank with required amount of dilution water per the treatment design.
- 2. Transfer EHC Liquid portion
 Part 1 to mixing tank. Note that
 this material is pre-emulsified,
 has a viscosity of about 3,000 –
 4,000 cPs and will require an
 appropriate pump for transfer
 from the drum. Alternatively, the
 emulsion may be transferred in
 pails by hand. A paddle mixer
 and/or recirculation pump is
 sufficient for mixing.
- Add in powdered mix Part 2 and continue mixing. Ensure no solids remain on bottom of tank.



If other additives are used (e.g., pH buffers), they may be added at this time.

4. Mixing time depends on equipment used (typically 5-10 min). Material is to be mixed until uniform.

Health and Safety

EHC Liquid is safe when handled properly in accordance with instructions for use, the advisory below and the MSDS. The EHC Liquid MSDS is posted on our web site at:

www.environmental.fmc.com/resource-center

When working with EHC Liquid, the use of standard personal protective equipment, including safety glasses, chemically resistant boots and nitrile gloves is recommended. Dust mask may be required when in close contact with the EHC Liquid powder component (Part 2) under certain conditions. Additional safety equipment may be required for site operations.

The information contained herein is, to our knowledge, true and accurate. However, we make no warranty or representation, expressed or implied, and nothing contained herein should be construed as permission or recommendation to infringe any patent. Any and all intellectual property rights to this material are retained by FMC Corporation.

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ATTACHMENT B

LABORATORY REPORTS

(on compact disc only)

APPENDIX C

FIELD FORMS

Sheet	of
Date:	04/21/14

Well ID:	MM	S S	Sample ID		Подаварина выправления «« но да Расправления постоя по почения пред	Sample Time:	1053	ĺ ,		Downstand	
	meter/type:		And the same of th	1 1 And a construction of the Property of the Construction of the	Well locati	on: Berry	Lagger	center		Weather: R	in Dueron
		25.50.	35.50		Sampling	personnel: 🕡	WAB	· · · · · · · · · · · · · · · · · · ·			
Total depth	1:	<i>35,9</i> 0		**************************************	Sampling	method: Low-flo	w micropurge		managaga ayan a sa s		
nitial depth	n to water (v		<u>(e.32</u>		Water leve	el indicator:	Huron	711	makerong gayang kalan		
	to water (v		6.60		Water qua			1165		4.8	
exportation contail was assumed as	and the same of th	th side of casi	ng I	T	Pump dep	an manyang pang ang ang ang ang ang ang ang ang ang	gatamentament and	proceedestination (III beginning representation)	Pump : /pe/m	odel: Monso	
5 min	Δ < 10%	Δ < 10%	Annual September 1988 Company of the		Δ < 0.1 pH	**************************************	Δ < 0.3 ft	< 1L/mjn		< 0.5 L/min	Parameter Stabilization Limits (3 consecutive readings)
Time	Temp (°C)	(mS/cm) or (µS/cm)	DO (%)	DO (mg/L)	рН	ORP (mV)	Water Level -(feet btoc)	Flow Rate (L/min) or /mL/min)	Turbidity (NTU)	Purge Volume (L) or (mL)	Additional C omments
9 33	22.1	0.392	44.9	3.87	7.35	146.6	110608	350	653N		- hereto fer bed
9936	22.1	0.383	34.6	3.03	7.69	143.6	16.97	500	78710		- Sloht drew down
0539	22.1	0.375	32.2	2.79	210	143.2	16.98	400	45		
0942 1945	222	0.373	30. <i>3</i>	201	7.11	143 2	16.77	200	41		
ghad a dame			**** 5,36	render	1 - A	PAIN)		AND THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF	manufoldings company or a control of the control	THE PERSON NAMED IN COLUMN TWO IS NOT THE PERSON NAMED IN COLUMN TRANSPORT NAMED IN COLUMN TWO IS NOT THE PERSON NAMED IN COLUMN TRANSPORT NAMED IN COLUMN TWO IS NOT THE PERSON NAMED IN COLUMN TRANSPORT NAMED IN COLUMN TWO IS NOT THE PERSON NAMED IN COLUMN TRANSPORT NAMED IN COLUMN TWO IS NOT THE PERSON NAMED IN COLUMN TRANSPORT NAMED IN COLUMN TWO IS NOT THE PERSON NAMED IN COLUMN TRANSPORT NAMED IN COLUMN TWO IS NOT THE PERSON NAMED IN COLUMN TRANSPORT NAMED IN CO	
1044	21.8	0.366	26.6	2.37	244	1771	1ce. 38	400	105		
1647	21.7	0.368	28.6	2.49	7.33	1717	16.75	150	93.8		
1050	21.8	6.369		2.53	7.23	1019	16.89	350	69.3		
1053	22.1	0.374	27.1	2-35	77/0	168.4	14.90	200	521.3		
St. dee	W . E . E . E	9.1/9.	504 14 1		1.33	140.	1,4010				
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						1,1510					
	-					10177					**************************************

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Date:	04/19/15

Well ID:	MN-c	5	Sample ID			Sample Time:	1500			Becaused	
Casing dian	neter/type:	2'PUL		······································	Well locati	on: Wood	lot	and the second s	geographicae debictor - 1 to on the	Weather: C	Proposet humed,
Scree red in		10-35	construction of the superior and the superior of		Sampling p	personnel: 07	Y AB		Marketon and the control of the cont		
Total depth.			-		Sampling i	method: Low-flo	w micropurge		AND THE PERSON OF THE PERSON O	and the second s	
nitial depth	to water (v	v/o pump): 15	25		Water leve	el indicator: He	erioa	and the second s			
Final depth			5.30		Water qua	lity meter:	YSI KR	, Plus			
Measuring p	ooint: Nort	th side of casi	ng	-g	Pump dep	th setting: Se	2	province construction and the second	Pump pe/m	odel: Mans	ioon 542"
5 min	Δ < 10%	∆ < 10%	***************************************		Δ < 0.1 pH	omodykają je programinia pod	Δ < 0.3 ft	< 1L/min		< 0.5 L/min	Parameter Stabilization Limits (3 consecutive readings)
Time	Temp (°C)	Conductivity (mS/cm) or (µS/cm)	DO (%)	DO (mg/L)	рН	ORP (mV)	Water Level (feet bloc)	Flow Rate (L/min) or (mL/min)	Turbidity (NTU)	Purge Volume (L) or (mL)	Additional Comments
1444	24,3	15.79	10.6	0.84	6.91	1309	15.30	400	716AU		-under fixed ducke
1447	23.8	0.78	1.8	0.15	6.71	31.5	15.39	300	948		surface completion duis
1450	23. G	0.78	1.0	0.08	10,69	16.1	15.30	200	655		surface completion duis destroyed. Well ,5 under 13" wood deds 5, no pad
1453	25.2	0.0	0.4	0.03	6.20	12.7	15.35		(20)		13" wood dellis ind oud
1456	2/0	0.78	001	0.01		6.2	15.41	300	4.0		
					271	75.00					
t						***************************************					
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Well ID	MN	-24	Sample ID			Sample Time:	1205				
Casing dia	ameter/type:	2" P	W		Well locati	on: O'Reil	4 6+			Weather:	Pain, 76°F
Scree ed interval(s): 35-35-1 Samplin					Sampling	personnel: P	FY AB			The state of the s	
Total dept	h: 53°.	<u>۵</u>			Sampling i	method: Low-flo	w micropurge				
Initial dept	h to water (w/o pump): 6	.41		Water leve	el indicator: 🎢	ans 1				
Final dept	h to water (v	w/o pump): 🎣), <u>}</u> { <u>6</u>		Water qua			Plus	NT annual or negative 1975 annual negative		
promotes	The same of the sa	rth side of casi	ng	garacticae consequentes and and	Pump dep	th setting: 🛴	2	prov	Pump type/m	odel: Ma	19001 2"55
5 min	Δ < 10%	Δ < 10%			$\Delta < 0.1 \mathrm{pH}$		Δ < 0.3 ft	< 1L/min	Particular	< 0.5 L/min	Parameter Stabilization Fimits (3 consecutive readings)
Time	Temp (°C)	Conductivity (mS/cm) or (µS/cm)	DO (%)	DO (mg/L)	pН	ORP (mV)	Water Level (feet bloc)	Flow Rate (L/min) or (mL/min)	Turbidity > (NTU)	Purge Volume (L) or (mL)	Additional Comments
423.7	23.7	6.257	29.2	2.4	945	142.2	16.95	150	16223		9.93 Col on turbulal
1152	24.4	0.51	4.4	3.9	7.51	1578	17.96	X00°	13/		- the let of second and
1155	24.4	0.53	2.9	2.9	7.11	152.4	18.19	180	DS.		- Slow returne, slight
1158	23.8	0.53	2.4	0.21	7.06e	146.8	18.48	350	11		drue down
1201	24.4	0.54	2.5	02/	7.04	145.3	19.66e	200	92.8		
1204	24.3	0.54	2.5	020	7.04	137.9	20.23	200	75,4		•
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		T	aran dia mpatria aranga di tambih di di dang nyaman pengangan ana man					/	Production Address No. 1997-1997 Constitution and Address		
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Well ID:	MW-	3.3 	Sample ID			Sample Time:	1420	Business and the second		The second secon	
Casing dia	meter/type:	2"PUC	Andrew Control of the	· - halis adi akumphi sakish massa	Well locati	ion: BFE	lot	and the second s		Weather: K	Pain /clouds
Scree ed	interval(s):	150-54.4	2		Sampling	personnel: 0	T42B				
Total depti		49			Sampling	method: Low-flo	ow micropurge)	open personal program or to the other program or		
Initial depti	h to water (v	w/o pump): 4	15.18		Water leve	el indicator: 📙	ecion	annie als de l'Alle de l'A	month a branchester (a debit of free square		
Final depth	to water (v	v/o pump): 4	15.54		Water qua		YSI PIO	<i>t</i>	MFF commence was related to 10.5 Filt committee of the		
Measuring	point: Nort	th side of casi	ng	g	Pump dep	th setting: $5 \acute{o}$	2_		Pump 'zpe/m	odel: Nons	1004 55
5 min	Δ < 10%	Δ < 10%	MILTON STATE OF THE STATE OF TH		∆ < 0.1 pH	onderform to the Contract of t	Δ < 0.3 ft	< 1(/min		< 0.5 L/min	Parameter Stabilization Limits (3 consecutive readings)
Time	Temp (°C)	Conductivity (mS/cm) (µS/cm)	DO (%)	DO (mg/L)	рН	ORP (mV)	Water Level (feet btoc)	Flow Rate (L/min) or (mL/min)	Turbidity (NTU)	Purge Volume (L) or (mL)	Additional Comments
1405	24.6	0.61	24.5	1.83	201	176.0	46.35	125	OR		- needer Leobal
1408	24.7	0.6/	Ce. 7	0.55	6.94	169.0	46.63	325	OR		-clouder gransf
1411	25.2	0.62	46	0.38	6.93	159.9	46.99	250	OR		-cloudy orange -likely in; action related -slight ianual odos
1419	25.6	0.63	4.5	0.37	693	1523	47.38	325	OR		- slight jamuel oder
	25.6	0.63	47	0.38	6.93	144.0	47.38		OR		
	<u> </u>	0.00				111	17.50	2			
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Date:	04/2	1/6

Well ID:	MWO	L.L	Sample ID			Sample Time:	<u> </u>				
		2" FUC	yr Mantalannian w 4 was 1 w 1 mantalanahanna w w	of coll account name wereholders	Well locati	on: Behand	Mekons)		Weather: H_{ℓ}	smid, Overast/Rais
Scree ed	interval(s):	<u> 20-35 '</u>	conseques the source will be served to				+ AB				
Total deptl	n: <u>33,</u>				Sampling r	method: Low-flo	w micropurge		o Managara a company		
Initial dept	n to water (v	wlo pump): 10	1.65		Water leve	el indicator: 🥖	15/07		Commence and the contract of t		
Final depth	i to water (v	v/o pump): [3	46		Water qua	lity meter:	YSI Pro	Plus	TARREST CONTRACTOR CON		
Measuri ng	point: Nort	th side of casi	ng	-g-antonialsomousanssamean	Pump dept	th setting: 30	> ^		Pump 'zpe/m	nodel: <i>Maga</i>	oùn 55
5 min	Δ < 10%	Δ < 10%	1-021-02-03-03-03-03-03-03-03-03-03-03-03-03-03-		$\Delta < 0.1 \text{ pH}$		Δ < 0.3 ft	< 1L/min	udangan sanakara a	< 0.5 L/min	Parameter Stabilization Limits (3 consecutivé readings)
Time	Temp (°C) (Conductivity (mS/cm) or (pS/cm)	DO (%)	DO (mg/L)	рН	ORP (mV)	Water Level (feet bloc)	Flow Rate (L/min) or (mUmin)>	Turbidity (NTU)	Purge Volume (L) or (mL)	Additional Comments
0828	20.4	0.98	2.2	0.19	7.63	-0.7	13.31	300	50.7		- /
0831	20.5	6.98	0.5	0.03	6.65	-30.a	14.01	300	gipinan	- 5/es	of drew drew
0835	20.5	0.98	0.3	0.02	Calda	-37,9	14.53	<i>7</i> 00	52.1		
	20.5	0.98	0.2	0.00	6.67	40.4	15,21	400	52.0		- I was an
0441	80.6	0.98	-0.4	0.00	6.69	-42.0	15.38		6. fine 2		
2.D.L.	<i>V</i>	0.70		0.00	8 × 96 1		1-3-5-2				
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Date:	04/21/	16

Well ID:	MU-	09	Sample ID		and the process of the state of	Sample Time:	1305				
Casing dia	meter/type:	2" PUC			Well locat	ion: Ace l	an down	wea		Weather <i>O</i>	vercust/livet
Scree ed	interval(s):	20'-4	0		Sampling :	personnel: $b7$	+ AB				/
Total depti	1: 37.	.7/			Sampling	method: Low-flo	w micropurgo				
Initial depti	h to water (v	w/a pump): 20			Water leve	el indicator: 🧜	lusion		mandawan J. Way prog. 1477 p. Lapina		
Final depth	to water (v	v/o pump): 2	4,41		Water qua	ility meter:	YSI Pro	Plus			
Measuring	point: Nort	th side of casi	ng		Pump dep	th setting: 3^4	4.0'		Pump 'zpe/m	ndet: Man	5001
5 min	Δ < 10%	Δ < 10%	and the supplemental properties of the supplemental properties		Δ < 0.1 pH		Δ < 0.3 fl	< 11./min	CONTRACTOR OF THE PROPERTY OF	< 0.5 L/min	Parameter Stubilization Finits (3 consecutive readings)
Time	Temp (°C)	(mS/cm) (rrs/cm)	DO (%)	DO (mg/L)	рН	ORP (mV)	Water Level (feet bloc)	Flow Rate (L/min) or Int/min)	Turbidity (NTU)	Purge Volume (L) or (mL)	Additional C omments
1248	21.9	0.74	23.8	2.07	7.03	190.1	24.26	1210	//٥		
1250	223	0.75	22.0	1.86	6.72	193.7	24.10	150	110		
1253	22.7	0.75	19.9	1.69	6.70	191.9	24.20	300	21		
1256	232	0.75	23.2	1.53	6.70	193.5	24.30	٥٥٥	21		
1259	23. O	0.74	18.3	1.53		196.7	25.00	500	68.7		
10.0	30.0	<i></i>	,0	1 0 -	C	7.00.			90.1		to Proceedings and Control of the Co
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Date:	64/21	/K_

Well ID:	MW-C		Sample ID			Sample Time:	1430		Anna reconstruction of the second of the sec		
Casing dia	meter/type:	2"PK	er transport of the control of the c	· · · · · · · · · · · · · · · · · · ·	Well locati	on: SW 52	lecaner	TO A A RESIDENCE AND RESIDENCE	METANOME 1 101 11 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Weather C/	loudy/Rain
Scred ed	interval(s):	20-35	Marian and the second second second		Sampling p	personnel: 07	-1 <i>AB</i>	John Charles and John Charles and Char	Margament and a second and a second and the second	t has the commencer of the codes the background contract the background.	
Total depti	n: 35.	16	gentagge 17 on 1 / 2 Vision and an applicative step on state .		Sampling r	nethod: Low-flo	w micropurga		gir gazzani aran aran aran aran aran aran aran a		
		w/o pump):			Water leve	el indicator: H	PETON		and the second s	annuar ess annuar sinha che (sal dell'Albah) (sal dell'Albah) (sal dell'Albah) (sal dell'Albah) (sal dell'Albah)	
Final depth	n to water (v	v/o pump):27	7.80		Water qua		YSI Pio	Plos			and the second s
Measuring	point: Nor	th side of casin	ng	g-communication contraction co		th setting: 34		ys - american and a superior and a s	Pump 'zpe/m	odel: Moa	150cn I"
5 min	Δ < 10%	Δ<10%			Δ < 0.1 pH	ON OF WHICH PROPERTY OF THE PR	∆ < 0.3 ft	< H_/min		< 0.5 L/min	Parameter Stabilization Lunits (3 consecutive readings)
Time	Temp (°C)	Conductivity (mS/cm)	DO (%)	DO (mg/L)	рН	ORP (mV)	Water Level (feet bloc)	Flow Rate (L/min) or (mL/min)	Turbidity (NTU)	Purge Volume (L) or (mL)	Additional Comments
1417	23.6	0.57	24.3	1.89	G.12	12.9	27.49	200	G15BU		- lots of inspectate in
	24.3	0.58	10.7	0.89	9.10	2.2	27.80	300	35000		- lots of injectate in
1423	25.1	6.53	6.2	0.51	6.10	~2.1	28.10	050	40-328	139	-Strong odor
	25.2	6.53 0.58	6.2 5.1	7 B. D. C.	6.10		28.42	\$50	111		-very firsted, gray, 10.38 - Turbulis Mile
1429	25.4	0.58	4.1	0.33	6.11	-0.4	28.82	400	189		10.38 - Turbules Moto
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Well ID:	MW-	22	Sample II)			Sample Time:	<i>1535</i>		ENTERLY DESCRIPTION OF THE PROPERTY OF THE PRO		
Casing dia	meter/type:	2" AC	*. *		Well locati	ion: SW Cos		· a · c · c · c · c · c · c · c · c · c	www.co.com.co	Weather: Cl	loody/Rain
Scree ed	interval(s):	<u>50-55</u>	note the selection of a contract of the selection to the		Sampling	personnel: 0T	JAB		magazina ayan a sayan say		
Total dept	h: 55°		lagarita de la companya de la compa	~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~	Sampling I	method: Low-flo	w micropurge		#E ###################################		
Initial dept	h to water (\	w/o pump): 4	1.75		Water leve	el indicator: H	ecron		Mary American Service (Co. 1)		
Final dept	n to water (v	v/o pump): 🌱	2/2		Water qua	lity meter:	YSI ROP	U 5	and the second of the second o		
Measuring	point: Non	th side of casi	ng		Pump dep	th setting: 52			Pump '>pe/m	odel: M 64 S	08A 55
5 min	Δ < 10%	Δ < 10%			Δ < 0.1 pH		Δ < 0.3 ft	< 1L/min		< 0.5 L/min	Parameter Stabilization Emits (3 consecutive readings)
Time	Temp (°C)	Conductivity (nS/cm) (µS/cm)	DO (%)	DO (mg/L)	рН	· ORP (mV)	Water Level (feet btoc)	Flow Rate (L/inin) or [mt/min]	Turbidity (NTU)	Purge Volume (L) or (mL)	Additional Comments
1522	21.2	1.23	12.0	0.97	6.36	-37.8	47.21	400	2110 BU		- ugho fished
525	24.7	1.22	12.0 2.5 1.0	0.19	6.30	-38.9	48.29	<i>000</i>	1874110	~~~	- region fribul - stranginica. Blog
15028	25-1	1.21		0.09	6.26	-34.8	48.28	300	- 0.46		
1531	25.7	1.19	0.4	0.03,	6.21	-21.0	48.52	Ce82	- Over		
1534	25.9	1.18	0.1	00	6.21	-14.7	48.46	300	158.0		
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						7 1 1		15	feet		
								19:11	//		
						- Jeen		O			A CONTRACTOR AND A CONTRACTOR OF THE CONTRACTOR
						YU A					
						YU	15				
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Sheet		or	
Date:	200 February	160	 2615

Well ID:	MW-	D	Sample ID		i i i i i i i i i i i i i i i i i i i	Sample Time:	Contraction of the contraction o				
**************************************		2" PV				on: Lypness	110			Weather: C	her, Sway
Scree ed i	~	0 6-	and the state of t				a/AB		NAMES OF TAXABLE PARTY.		
Total depth		9.5	- 15			method: Low-flo			- delication of the contraction		
Initial depth			<u>5.35</u> ,				dinst.	71	manafet Autorio 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 -		
Final depth			2542		Water qua		YSI - PAS 1		and the second of the second o		
THE PERSON NAMED IN COLUMN	CONCOMPRESSION AND STREET STREET, STRE	th side of casi	ng I	years of a second control of the second cont	Charles and the second	th setting: 24	Character and an analysis of the state of th	par wysopidate de li Artigography and the de la Contraction de la	Pump t/pe/m	iodel: Mon	20 NOSCOLINIO (1992-1993) 1 NOSCOLINIO (1993-1993) 1 NOSCOLINIO (1993-1
5 min	Δ < 10%	Δ < 10%			Δ < 0.1 pH	NATURAL STREET,	Δ < 0.3 ft	< 1L/min		< 0.5 L/min	Parameter Stabilization Limits (3 consecutive readings)
Time	Temp (°C)	Conductivity (mS/cm) or (µS/cm)	DO (%)	DO (mg/L)	рН	ORP (mV)	Water Level (feet btoc)	Flow Rate (L/min) or (mL/min)	Turbidity (NTU)	Purge Volume (L) or (mL)	Additional Comments
13:30											Pup on
13:32	26.9	1.13	3-5	0.21	6.44	145.9	25.78	200	2629	· pagentinettinettine	
13:55	27.1	772	2.7	0.21	6.33	114.5	finding 2	589 300 V	1635	So with the property of the same	
/3:38	27.6	1.13	11	1.08	6.29	87-1	24.85	350	132	a load	Plan Ilustoating
13:41	77.8	1.13	0.0	0.00	629	58.2	26.26		122	- lyd.	Juw J
13:44	21.5	1.12	The state of the s	0.00	-		ì	,			1/ 4 1 1
1.3.7(1)	21.3	1:10	-0.2	The state of the s	6.31	40.8	26:3F	450	<u>77.6</u>	Earl of the Control o	Llow Libertrating Very parameters stabilized
						**************************************			provided No. 47 - 47 No. 19 No		
				/		entralistic de Arterior Projector de la consensión de Projector personal per experiente.			and the second s		
						and the state of the constant of the state o					
						arete months and a market and a			and the first of the second of the second of		
						de anti-marie agreement allement de la company de la co			commence of the contract of th		
							The second section of the sect				
										CONTROL QUEEZAN COLLEGE MORROR WALLOW MARCHES CO.	

Sheet _____ of ___ Date: _____ APR__ 2016

Ground Water Sampling Data Sheet

Well ID:	MW-	-03	Sample ID			Sample Time:	16.50	Parameter Parame	Bedanconnection	финализм	
		2" PUC	namengs	alle V _a quantity and the stage that the	Well locati	on: Beho personnel: R	d Mc G & AP	Kong		Weather S	roung ~ 79°
Scree ed i	.7 ~		Michigan III - I	- 1 - 1 - 2 × 1 - 2 × 1 - 2 × 1 × 1 × 1 × 1 × 1 × 1 × 1 × 1 × 1 ×			•		Market Company of the		
Total depth			2,00	er for the second second second second		method: Low-flo	Ninst		es a section de la constant de la co		
	to water (6:42			······			propogramma in the same of the		
	to water (v	wo pump): th side of casi	4	***************************************	Water qua Pump dep	7 .	ysi 3.0		Pump 'zpe/m	odel: 55	HUZZELAWE
5 min	Δ < 10%	Δ < 10%	***************************************		Δ < 0.1 pH	more desired of	Δ < 0.3 H	< 1L/min	Latinia Stanto	< 0.5 L/min	Parameter Stabilization Limits (3 consecutive readings)
Time	Temp (°C)	Conductivity (mS/cm) or (µS/cm)	DO (%)	DO (mg/L)	рН	ORP (mV)	Water Level (feet btoc)	Flow Rate (L/min) or (mL/min)	Turbidity	Purge Volume (L) or (mL)	Additional Comments
16:37					Pun	rp	00	The second secon			ALL OTW include 7" piece
16:37	22.8	0.96	56.1	4.61	698	80.2	16.38	175	1377144		(temp installed due to hoter)
16:4	21.2	11.95	44.6	3.89	6268	85.0	16.55	454	2194 AU	-	
16:45	22.3	0.95	44.8	3.89	6.66	88.3	16.52	456	723	is attended or the	
16:48	22.7	0.94	44.1	3.82	6.65	92.1	16.52	450	6200	,	
-				12 - 0 - 0 - 1					And the second s	And the second s	SAMPLE.
			adalah da berbah yangnya yang sapenya semilan kan s						AND THE PARTY OF T		
		-				- 1. TO 1887 IN CONTROL AND ADDRESS OF THE PARTY OF THE P					
			indifferent of the first of progression is good gapping proving a second								
) ANA-MATTER CONTRACTOR OF THE RESIDENCE OF THE PARTY OF								
			A PARTICULAR DE CONTRACTOR DE								
									and the second s		A CONTRACTOR OF THE CONTRACTOR
			Control of the contro								
			tanto a managar parameter anno a managar								
			***************************************		area area						
			and a description of the same								
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Recorded By: Lyan Gull

Well ID:	MW	-02 -03	Sample ID		en foode die de steel	Sample Time:	[15:25]			general property of the control of t	
Casing dia	meter/type:	2000			Well locat	ion: SHAW	IU00-P1	K & Jo.	res Pd.	Weather:	Day - 18° lt. Wills.
Scree ed	interval(s):		n day program, a construint galant province province and			personnel:		committee and the committee of the c			V
Total dept	h: 30	1.54	tagenment or year terror deletion the forest of		Sampling	method: Low-flo	w micropurge		and a second contraction of the second contr		
Initial dept	h to water (w/o pump): /	F19		Water leve	el indicator:					
Final deptl	to water (w/o pump): 🦪	20.70		Water qua			Plus	and the state of t		
Measuring	discussiones contractions	th side of casi	ng	- granner and a second a second and a second and a second and a second and a second a second and		th setting: 31	'broc	ye r an an manan bir asta garang kangkan kangkan kanan	Pump type/m	The second contract to the second	The state of the s
5 min	Δ < 10%	Δ < 10%		Anna Anna Series Se	∆ < 0.1 pH		Δ < 0.3 ft	< 1L/min		< 0.5 L/min	Parameter Stabilization Limits (3 consecutive readings)
Time	Temp (°C)	Conductivity (mS/cm) or (µS/cm)	DO (%)	DO (mg/L)	рН	ORP (mV)	Water Level (feet bloc)	Flow Rate (L/min) or (mL/min)	Turbidity (NTU)	Purge Volume (L) or (mL)	Additional Comments
14:54											Pup on
14:56	24.6	0.62	2.3	0.17	624	-112.6	18.42.	400	2198m		- Black Prairitant (PPT) & Recheny Oder
14:59	245	0.62	0.5	0.06	6.08	-925	1903	330	1126		V
15:02	24.9	0.62	-0.1		600	-98,5	20.20	500	952	***************************************	D
15:05	25.1	0.63	-0.7		6.02	-100.4	20.75,	460	627AU	American Control Control	flow flutrohy (uncontrollably)
15:08	24.7	0.63	-0.7	Auditoria James Villanda	6.04	-99.2	24.70	275	-76 NoTU		ODD TURBEDIM RENOTING
15:11	25.3	0.66	-1.2		6.08	-98.J	21.90	300	-67 NM		10 NTU STO = 9.73 V
15:14	24.9	0.66	~Ø.9	Company Compan	6.09	-98.3	22-60)	2/4	-73 NTU	***************************************	
15:17	252	0.68	-1.2		6-11	-98.2	22.65	200	53.Ø	Company of the Control of the Contro	SAMPLE
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:								***************************************			
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Sheet	1. 05:	
Date: 04	1221	11.
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Well ID:	MW	N	Sample ID			Sample Time:	10.53				
Casing dia	meter/type:	2"PK	<u>, </u>		Well locati	on: Burla	ws Store	Front		Weather: Su	nny 76°F
Screr ed		25-30	The state of the s		Sampling p	personnel: AB	·+K6		MI ANN COLOR OF THE COLOR	and on agrains, supersystem to the supersystem of t	
Total depti					Sampling r	nethod: Low-flo	w micropurge		automorphy www.		
Initial depti	h to water (v	v/o pump): \mathcal{A}^{c}	4.42		Water leve	l indicator: 14	erroin		anagaman and a second a second and a second		
Final depth	n to water (w	v/o pump): 2	4.46		Water qua		ysı Ko	Plus	and a different section of a finite of the section		
Measuring	point: Nort	h side of casir	ng	por communicación de la co	Pump dept	h setting: 28		ike emplement des montantischt deutste des des patients	Pump type/m	odet: Mons	001 55 Q"
5 min	Δ < 10%	Δ < 10%	krykopii kirkopi nyyddyddigad padykaji yikom		Δ < 0.1 pH	makkine tamakin nganinda kilangan menancintak kilangan	∆ < 0.3 ft	< 1L/min	A STATE OF THE STA	< 0,5 L/min	Parameter Stabilization Limits (3 consecutive readings)
Time	Temp (°C)	Conductivity (mS/cm) or (µS/cm)	DO (%)	DO (mg/L)	рH	ORP (mV)	Water Level (feet bloc)	Flow Rate (L/min) or (mL/min)	Turbidity (NTU)	Purge Volume (L) or (mL)	Additional Comments
10:19											Rup on
10:25	25°	1.00	2.1	0.17	6.74	194	24.90	500	63.4	+pg/hjfh/2204789900	
10:28	25.1	0.99	1.4	0.11	658	194.6	24.92	500	51.0	and the second second	
10:31	25.5	0.99	0.3	0.02	6,56	196.8	24.92 24.89	400	51.0° 1 25.7	a Million Colonia Colo	·
	25.6	1.00	ØJ	0.01	6.55	195.7	24.92	400	15.3%	Magaican and a major and a	
	25.5		-0,3	******* ****** *****	6.55	193.0	24.97	450	9.87		110000000000000000000000000000000000000
OLOA	00.0	L/-, /			0.00	*****	100 K				
						THE PERSON NAMED IN COLUMN TO THE PE					
			MATERIAL POLICIES NO. STOPE SAN AND SANDARD PROSP.								
									- AMERICA CONTRACTOR		
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						Different management of the second active of the second active and a second active act					
						v*					

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Sheet	of)
Date:	7/23	116

Well ID:	SVE		Sample ID	SVE	- 1	Sample Time:	4.35				
Casing diameter/type: 2" PVC					Well locati	on: Cypre.	ss Cente	r, 11600	Jones	Weather: C	lest, 750, 10m/h - And
Scree ed interval(s): 70 - 130				Well location: Cypress Center, 11600 Jones Weather: Clear, 75°, 10 mgh - ind Sampling personnel: R GUM, A. Bugher							
Total depth: 130 ′				Sampling r	nethod: Low-flo	w micropurge	(
Initial depth to water (w/o pump): 106.25'				Water level indicator:							
Final depth to water (w/o pump):				Water qua		YSI >	ffesslen.	n1 P/us			
Measuring	· Committee of the comm	th side of casin	1g	g-man-man-man-man-man-man-man-man-man-man	Pump dept	h setting:	B	···	Pump type/m	CONTRACTOR OF THE PROPERTY OF	ega monsoon Pro
5 min	Δ < 10%	Δ < 10%	ANY LEGISLOS CONTRACTOS OF PROTECTION OF PROTECTION OF THE PROTECT	n de de la companya d	Δ < 0.1 pH	and the second s	Δ < 0.3 ft	< 1U/min		< 0.5 L/min	Parameter Stabilization Urnits (3 consecutive readings)
Time	Temp (°C)	Conductivity (mS/cm) or -(µS/cm)	DO (%)	DO (mg/L)	рН	ORP (mV)	Water Level (feet btoc)	Flow Rate (L/min) or (mL/min)	Turbidity (NTU)	Purge Volume (L) or (mL)	Additional Co mments
4.16	at I had a ship in garage	Notice of the second se		TV -0-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0	New State State on the State S	anny years to the contract of	on a superior of a physical procession.		and the second s	nagerindi, elegistroni estimo y e e e e e e	Wing - on
1118	24. F	0.82	78.0	6.44	7-51	84.1	40625	540	15.8	Ø	offing Cutt wir induction
1.21	24.4	0.81	75.2	636	7.88	86,4	407	E00	32.7		(July 5 Gradahons)
11:24	24.9	0.82	75,9	6.27	693	88.3	~107	900	27.6	J. J.	
11:27	25.0	0.82	72.7	5.98	691	90.0	407.5	900	1130		
11:30	25.1	0.82	73.Ø	5.98	1.90	92.8	-107.5	900	1.93	-4gel	.96
alle a factoria										7	STAMPLE EN VOC.
						one de la company de la compan		***************************************		***************************************	
uggygggggggggggggggggggggggggggggggggg											
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Sheet	of	-
Date:	4127/) 6

Well ID:	LSVE	anna uuunin maanaan ka	Sample ID		-06	Sample Time:	1340				
	meter/type:	2° P	UC	11. P. a (12-non-1-fed) Laga annian ler (11) Laga	Well locat	ion: Pron	1 of 6	- 	1. Feet	Weather: S	my u 85° f
Scree ed		Andrew Service Control of the Contro	NA Resident to a 1970 Propher Made Address of the con-	1. Terani di Mahada I. Masada di Malada Milyana	Sampling	personnel: K(2/13		Wingger, a constitute of age of the state of	·	
Total depti	n: / ?)		manusco de la companya de la company	***************************************	Sampling	method: Low-flo			and an analysis of the second second		
Initial depti	n to water (\		09		Water leve	el indicator: 🗳	Settiest		500'	Things is a special to the sequence of the seq	
Final depth	to water (v	vlo pump): 🛭 🗸	H		Water qua		AND DESCRIPTION OF THE PARTY OF	Mus	Mary and a second and a second at 1984	V	
Measuring	point: Nor	th side of casi	ng	A1100 -	Pump dep	th setting: \\	4		Pump : /ne/m	odel: Mea	a Monson
5 min	Δ < 10%	Δ < 10%			Δ < 0.1 pH		∆ < 0,3 ft	< 1L/min		< 0.5 L/min	Parameter Stabilization Limits (3 consecutive readings)
Time	Temp (°C)	Conductivity (mS/cm) or (µS/cm)	DO (%)	DO (mg/L)	рН	· ORP (mV)	Water Level (feet bloc)	Flow Rate (L/min) or (mL/min)	Turbidity (NTU)	Purge Volume (L) or (mL)	Additional Comments
/3:33	- Company of the Comp	The state of the s					4.75(80.000).uusaanajayayasta	A the best of the control of the con	No. of Contrast of the Spinish Laboratory	Particular and the state of the	Perop on
13:25	24.1	0.78	33-8	2.80	6.93	-22.8	109"	5 50	7 1,000	to Section above expuse Septem	
13:28	24.0	0.77	30.0	2.52	691	-23.1	109'	450	7,1,00	egostino-manifestro	
13:37	23:8	0.77	24.0	202	6.87	-160.6	109°	450	288440	¹ Speciments constructed to	
13:54	244	0.77	20.5			-19.7	109	450	2065	e personal de la companya del companya del companya de la companya	
13:37	250	0.78	167	1.37		-26.8	109	350	1741	Marie	SAMPLE
11					W-07	And I'V	/ 5/		1.6.16		
						reservativa agrae esta servaria que academica esta por esta por esta esta esta esta esta esta esta esta					
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		***************************************				***************************************					

Recorded By: Kur Cuth

Sheet _____ of ____ Date: _____ 3016

Well ID:	<i>5</i> 05	ennestrasy proportion of the second s	Sample ID			Sample Time:	14:50		STATE					
Casing dia	meter/type:	2° pu		· Marine and a second desired	Well location	on:		no ann a lean a lea 1980 an aire ann an Agus Mheile aine Mheile an Agus Mheile aine Mheile an Agus Mheile aine	BORROWS on Wilder St. D	Weather: ≤	ing ~ 88 f			
Scree ed i	nterval(s):		and describes a second of the description of the second of		Sampling p	personnel: //	6/AB		ME Magazinia consessionere e e e e e e e e e e e e e e e e e e		0			
Total depth	u /	30'			Sampling r	nethod: Low-flo			and a filled and construction of the Construct					
Initial depth	to water (v		091		Water level indicator: Curt. 500'									
Final depth	to water (v	v/o pump): /	109		Water quality meter: YSI Pro PWS									
Measuring	point: Non	th side of casi	1g		Pump dept	h setting: //	i G.	powers and representation and resident	Pump type/m	odel: ///	lega plonsoon (S.S.)			
5 min	Δ < 10%	Δ < 10%	arm birinning didirin kanggan atau ang s		Δ < 0.1 pH		∆ < 0.3 ft	< 1L/min	- The state of the	< 0.5 L/min	Parameter Stabilization Limits (3 consecutive readings)			
Tir∼e	Temp (°C)	Conductivity (mS/cm) or (µS/cm)	D O (%)	DO (mg/L)	рН	ORP (mV)	Water Level (feet bloc)	Flow Rate (L/min) or (mL/min)	Turbidity (NTU)	Purge Volume (L) or (mL)	Additional Comments			
14:38											Rup of.			
14:39	24.8	0.64	75.3	6.14	7.02	87.8	5/09	359	GFNTU		7			
14:42	24.5	0.62	71.5	5.92	6.89	95.5	109.	400	91.2					
14:45	24.6	0.61	72.1	6.01	6.82	101.2	109	350	63-3					
14:48	24.8	0.60	71.4	6.01	690	103.9	109	5 g/cp	38.0	of the transportation of the same of the s				
			,								SAMPLE			
								- Vision and Control of the Control						
									The second secon					

Recorded By:	Ryan	公林	

Sheet	1	of _	
Date:	2.5	MPR	201

Well ID:	SVE-	aan ayaa ahaa ka ahaa ka ahaa ka ahaa ahaa	Sample ID	A-over-management of the state		Sample Time:	Engagement settlement of the second or work		To call the free control of the cont	g to continue to the continue			
Casing dia	meter/type:	2" R	パー		Well locati	on: S. of AU	E HOWE /O	ucerow 40		Weather:	Pt Clary, ~86°F		
Scree ed i	nterval(s):	-	en e		Sampling p	Il location: S. of ACE HDWX JOICEFLOX LOT Weather: Pf Clavely ~ 86 F							
Total depth	: 13		***************************************			method: Low-flo			er bekenningspracher i 115 er trauben i				
nitial depth	to water (w/o pump); /	03-75		Water leve	el indicator:	Parameter and the Control of the Con	of a fine of the second		***************************************			
Final depth	to water (v	w/o pump):			Water qua	uality meter: YSI - (no Plus							
Measuring point: North side of casing					Pump depth setting:				Pump ! /pe/model: Maga Monsoon				
5 min	Δ < 10%	Δ < 10%			Δ < 0.1 pH	en e	$\Delta < 0.3 \text{ ft}$	< 1L/min	ANGER OFFICE PROPERTY OF THE PERSON	< 0.5 L/min	Parameter Stabilization Limits (3 consecutive readings)		
Time	Temp (°C)	Conductivity (mS/cm) or (µS/cm)	DO (%)	DO (mg/L)	рН	ORP (mV)	Water Level (feet btoc)	Flow Rate	Turbidity (NTU)	Purge Volume (L) or (mL)	Additional Comments		
15:55	· · · · · · · · · · · · · · · · · · ·		ang galang canada an	Children age age age and a second a second and a second and a second and a second and a second a				And the second s	AND THE PROPERTY OF THE PROPER		Pomp on.		
557	23.7	Ø.78	71.5	6.00	6.94	99.4	Park International Contractions	500	684	THE MONTH ON AU-	* No WE meter waited		
6:00	23.9	0.78	68.8	5.78	678	101.5	Printed the original printed the control of the con	550	929	Supportable Support	- during this well use that		
16:03	24.1	0.79	69.2	5.77	6.14	103.1	·p	44450	114	0,000	* No we meter qualifold . Army flow well was flow . Form SUE-G:-1:-9		
16:06	24.1	6.79	69.2	5.82	6-72	102.8	New mean consumer.	900	468	V Tool	(3.5 to 4gel)		
6:09	24.1	0.79	69.2	5,83	6.75	102.0	Mary and the second sec	900	19.3	v. Yan	8.5 to 4 gal		
		3550			500			*/-/-	1: =	1			
			erikana aran kerinda da d										
			and a construction of the										

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ate:	-	2	6	4	E		
		7	100	7:			

Well ID:	MW-01		Sample ID:		Sample Time: 0755								
Casing diam	neter/type:	2" PUL			Well locat	Well location: Store Fort Acidal Market Weather: Suny 450F							
Screened in	terval(s): 🍃	<u> </u>		CONTRACTOR OF THE PROPERTY OF	Sampling	personnel: Da	any, T, D.	cha B					
Total depth:	35				Sampling	method: low	How me	CIO PURC		eri prilimuo di discono construccioni di di di discono giorgi ni di si di di			
Initial depth	to water (w/o	pump): 25	7.03		Water leve	el indicator: He	ron	/ /		~~~			
Final depth	to water (w/o p	oump): 25	<u>. 33 </u>		Water qua		I Ko						
Measuring p	oint: North s	ide of casing	······································		Pump depth setting: 3 0 Pump type/model: Marson Pro								
<u> </u>		erjärintrattingalassisianaan oli laster on aanaan oli laster on aanaan oli laster on aanaan oli laster on aanaa	· · · · · · · · · · · · · · · · · · ·	T	<u> </u>				<u> </u>	1			
Time	Temp (°C)	Conductiv (mS/cm) or (µS/cm)	%DO	DO (mg/L)	рН	ORP (mV)	Water Level (feet btoc)	Flow Rate (L/min) or (mL/min)	Turbidity (NTU)	Purge Volume (L) or (mL)	Additional Comments		
0739	22,2	862	20.1	1.57	6.99	94.1	25,41	225	///				
0742	23,9	895	12,4	1,03	6,65	73.2	25.54	300	149				
15745	25.2	926	7.6	0.80	6.60	53.7	25.64	300	14				
1048	25,5	931	8.2	0.67	6.60	41.0	25.71	350	82.5		-stout draw down		
1051	25.0	734	7.4	0.60	6-60	21:60	25.81	350	58.9				
	(1906) - Andrew Grand Control (1906) - Andrew Grand Control (1906)	elikinist 1900 gazagan, manusi kirindi Palitik Pagagani mak		######################################		AND THE PROPERTY OF THE PROPER							
		Macroniothy, gassayan erroren mitrianganan				entricki (<u>saasses</u> e georgei (kitti (kitsa), sais (kitsassa) pieni ita ita (kita)							
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Well ID:	MW-	62	Sample ID			Sample Time	: 0935					
Casing diar	neter/type: _	2"PUC			Well locati	ion: NW C	Coines Sh	opin Ci	W 6)	Weather:	Sunny, 60°F	***************************************
Screened in	nterval(s): 😞).5 -33		name di li Maria de la compania del compania del compania de la compania del la compania de la compania del la compania de la	Sampling	ىن personnel: D	ene Thon	or, Joh	n Bon	<u>ier</u>		
Total depth	<u> 3</u> 9				Sampling	method: /our	Flow m	ucro pur	52			
Initial depth	to water (w/o	pump): 23	.10		Water leve		101	1				
Final depth	to water (w/o	pump): 3	150		Water qua	ility meter: 📈	SI Pro	2				
Measuring	point: North s	ide of casing	ėvaninė erektininė autoriai daraktininė autoriai daraktininė autoriai daraktininė autoriai daraktininė autoria		Pump dep	th setting: 30) 		Pump type/m	nodel: Vlov	1400n Pro	
Time	Temp (°C)	Conductiv (mS/em) or (µS/cm)	[}] %DO	DO (mg/L)	рН	ORP (mV)	Water Level	Flow Rate (L/min) or (mL/min)	Turbidity (NTU)	Purge Volume (L) or (mL)	Additional Comments	
6914	22,3	817	31.3	2.68	6.73	148.7	24,30	225	463			
0917	22,4	247	24.8	0,31	(0,2)	125.6	35/.35	250	464			
0920	23.5	866	27.6	2.33	6.2	110,7	24.56	250	415			
0923	23,8	875	33.0	2.82	6.22	98.0	24,72	325	229			
0926	24.0	880	34.1	2.38	Co.24	90.3	24.83	275	144			
0929	23.7	878	31,5	2.43		03.7	24.82	250	104			
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Well ID:	MW-C	5	Sample ID:			Sample Time	1050				
Casing dian	neter/type: //	R"PVC	_		Well locat	ion: Baind VI	Mekons K	est.		Weather: 5	uny 60°F
Screened in	iterval(s): 🍝	2,5-35		materia.	Sampling	personnel: Dec	ene T	Sehn P	2		
Total depth:	35				Sampling	manifestation of the second	flow m	1610001	3C		
Initial depth	to water (w/o	pump): 📿	<u> </u>		Water leve	el indicator: 🤼	00/				
Final depth	to water (w/o p	pump): 🚕	<u>1,23</u>		Water qua	ality meter: 1/5	I, 100	والمتعادية والمتعادية والمتعادية	i i i i i i i i i i i i i i i i i i i		
Measuring p	oint: North s	ide of casing	describitation and the second and th		Pump dep	th setting: 30	2'		Pump type/m	nodel: Ma	recon Tro
Time	Temp (°C)	Conductiv (mS/cm) or (µS/cm)	%DO	DO (mg/L)	рН	ORP (mV)	Water Level	Flow Rate (L/min) or (mL/min)	Turbidity (NTU)	Purge Volume (L) or (mL)	Additional Comments
1033	20.2	878	24.3	2.14	6,56	140.3	22,50	300	308		
1036	20.3	902	18.7	1.000	6.59	1237	2256	250	286		
1039	21.8	925	16.1	141	6.62	110.Ce	22.60		195		
1042	21.8	966	13,3	1.16	Co.Ceo	99.4	22.60	400	97.9		
1045	21.1	1003	11.8	1,04	10.600	91.2	22.48	250	52.5		
1048	21.2	1014	11.2		6.60	84.2	22.48	250	499		
	- Marie Carlo Mari				0100		<i>(</i> Δ				
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	and three considerations the second	***************************************	***************************************			and the second s					
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Date: 🔟	27م	2 I	5

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Well ID:	MW-		Sample ID:			Sample Time:	B55			Brookwag	
Casing dian	neter/type:	2"PK			Well locat	tion: Behind	Centera	IN G	celine	Weather:	wfly sunny 65-05
Screened in	nterval(s):				Sampling		ine T. Ja	ha B			
Total depth:	35′				Sampling	method: Low	flow m	LICIONAE			
Initial depth	to water (w/o	pump): 21	.63		Water lev	el indicator: He	sion		44.61		
Final depth	to water (w/o p	pump):		and the state of t	Water qua	ality meter: 💥	I PRO				
Measuring point: North side of casing Pump depth setting: JUM 27 Pump type/model: Mansoon Pro-											
Time	Temp (°C)	Conductiv (mS/cm) or (aS/cm)	%DO	DO (mg/L)	рН	ORP (mV)	Water Level	Flow Rate (L/min) or (mL/min)	Turbidity (NTU)	Purge Volume (L) or (mL)	Additional Comments
1335	20.8	1495	24.8	2.17	7.0	1 -/23.9	22.80	275	917		-remued medalis
1338	21.6	1483	10.5	0.90	6.80	-171.7	23.18	375	242		- well had so lid or no tight
1341	21.5	1463	9,7	0.85	6.7)	-181.6	2295	225	264		Irdanduns organism med
1344	21.5	1470	8.9	0.78	6.75	-18/2.2	22.95	d75	193		-cleared mud plus
1347	21.7	1477	8.0	0.70	6.74	-189.1	22.98	275	118		-cuater very turbid.
1390	21.8	1478	7.6	0.67	6.74	-191.6	22.98	250	14.7		
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Sheet _____ of ____ Date: <u>12/02/15</u>

Field Record of Well Purging and Sampling

Well ID:	MVV-C	3	Sample ID			Sample Time:	1///0				
		2" AC			Well locat	ion: Behard S			······································	Weather: C	larly 2600F
Screened in	iterval(s): 2	<u>'-35</u>	nichtiffe sowe en er en im der en	radional control of the superior to the second	Sampling			John B.	nandi (giran mananana) aya ini mini da ini aya a		
	35.5				Sampling	method: /6w	flow in	cropus	<u>C</u>		
Initial depth to water (w/o pump): 20,57) Water level indicator: Heron											
Final depth to water (w/o pump): 22.04 Water quality meter: VSI 100											
Measuring point: North side of casing Pump depth setting: 29									Pump type/n	nodel: Ma	ppen fro
Time	Temp (°C)	Conductiv (mS/cm) or (µS/cm)	%DO	DO (mg/L)	рН	ORP (mV)	Water Level	Flow Rate (L/min) or (mL/min)	Turbidity (NTU)	Purge Volume (L) or (mL)	, , , Additionąl Comments
1123	21.9	1077	10.0	0.38	6.64	19.2	23.89	425	OR		- High furbidity
1126	22.2	1084	11.9	1.02	6.58	-1.2	22.79	200	OR		
1129	22.6	1081	9.Ce	0.82	The second of th	-29,4	22.94	250	828		
1132	22.6	1076	91	0-82	6.59	-56.4	22.94	350	456		
1135	22.8	1078	8-8	0.76	659	-73.6	22.98	300	292		
1138	22.7	1075	8.4	0.72	6.60	-%.7	22.90	125	148		
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Well ID:	MW-0	Q	Sample ID:			Sample Time:				Philosophis	
Casing dian	neter/type: 🎿	2"906			Well loca	ition: SW Car	ner lst			Weather: (landy 50°F
Screened ir	nterval(s): 🥏	35"			Sampling	personnel: づめ	n Bonner	Dieen	e T		
Total depth:					Sampling		y Plan		rae		
	to water (w/o	pump): ろ	3.76			vel indicator: 🕹	leron	9			
Final depth	to water (w/o	oump):	***************************************	············	Water qu			07			
Measuring p	point: North s	ide of casing			Pump de	pth setting: 34	5		Pump type/m	nodel: <i>55</i> /	Monsoon
	T	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	T	1	1	T	1			1	
Time	Temp (°C)	Conductiv (mS/cm) or (µS/cm)	%DO	DO (mg/L)	рН	ORP (mV)	Water Level (feet btoc)	Flow Rate (L/min) or (mL/min)	Turbidity (NTU)	Purge Volume (L) or (mL)	Additional Comments
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Jones Road Superfund Site -Harris County, Texas

Field Record of Well Purging and Sampling

Well ID:	MWO	2	Sample ID:			Sample Time:					
Casing diar	meter/type:	2"Pu				ition: BFE la	+	11	u 13	Weather: Ro	un, sof
Screened in		20-35					n Theme		1175		
Total depth			1177			method: low f		apporge			
	to water (w/o p	the same of the sa	. 43				T P	,			
	to water (w/o p					-Three	I BO	and the second s	·	P.	M
Measuring	point: North si	ide of casing			Pump de	pth setting: 5	4		Pump type/m	nodel: 1/0	Monsian
Time	Temp (°C)	Conductiv (mS/cm) or (µS/cm)	%DO	DO (mg/L)	pН	ORP (mV)	Water Level (feet btoc)	Flow Rate (L/min) or (mL/min)	Turbidity (NTU)	Purge Volume (L) or (mL)	Additional Comments
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Well ID:	MW-E		Sample ID:			Sample Time:	1025				
Casing dian	neter/type: C	2" PUC 5.5 - 35.			Well loca	tion: BBQ U	100d;			Weather: K	othy Closely 600
Screened in	terval(s): 20	5.5-3S.	.5			personnel: Dua	ne Thomas				
Total depth:	36.5				Sampling	method: Low	Row mi	LOQUEC)		
Initial depth	to water (w/o	pump): 20	1/2		Water lev	vel indicator: He	on			skataunatori i iniga parimondo di minus servicios.	
Final depth	to water (w/o p	oump): 👌	<u> </u>		Water qu	ality meter: YS	<u> </u>				
Measuring p	oint: North s	ide of casing			Pump de	pth setting: 🏻 📿	150an Pro				
Time	Temp (°C)	Conductiv (mS/cm) or	%DO	DO (mg/L)	рН	ORP (mV)	Water Level	Flow Rate (L/min) or (mL/min)	Turbidity (NTU)	Purge Volume (L) or (mL)	Additional Comments
1005	22,3	388.7	12,1	1.0/	7.0	-87.0	20.50	300	545	(L) OF (IIIL)	-weter filler with
1008	25,0	405,3	8.60	0 72	7/8	The state of the s	20.65	400	698		debris
1011	23.2	4140	7.6	0,05	7.18	-126,4	20.55	250	215-1		- odor of muda debus
1014	23.1	433.1	OZA	0.62	7.05	-141.9	20,59	300	278		From Filling cluring
1017	23,4	462.1	6.9	0.50	7.16	-147.4	20.Cer	425	178		destruction
1020	23,5	474,2	6.8	0.58	7.07	-140.0	20.74	425	158		- twilly clewing
1023	23,4	493	76.6	0,56	7.07	-137.5	21.0	425	109		
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Well ID:	MW-	09	Sample ID:			Sample Time	0915							
Casing diar	neter/type: C	2'91			Well locat	ion: Ace S	South lo	<u> </u>		Weather: Co	oly Cloudy 6005			
Screened in		0-35	CONTRACTOR		Sampling	Sampling personnel: Dulaus Thomas								
Total depth	35				Sampling	Sampling method: low flow Micropusse								
Initial depth	to water (w/o	pump): 2Cg	,96		Water level indicator: Heron									
Final depth	to water (w/o p	oump): 27). 74 <u> </u>		Water quality meter: YST PRO									
Measuring (ooint: North s	ide of casing	·	TOTAL CONTRACTOR OF THE PARTY O	Pump dep	oth setting: 3	<u>'</u> 0'		Pump type/m	odel: Mo	1500n Pro			
Time	Temp (°C)	Conductiv (mS/cm) or (µS/cm))	%DO	DO (mg/L)	Нq	ORP (mV)	Water Level	Flow Rate (L/min) or (mL/min)	Turbidity (NTU)	Purge Volume (L) or (mL)	Additional Comments			
20.0	19.9	673	26.5	2,53	6.92	1609	28.19	250	700		-wastes steptly forted			
0900	20.6	691	24.9	2.23	10.71	1560/	27.91	200	272					
0903	21.3	698	22.4	1.28	Colda	152.6	28.13	200	367					
0906	21.3	702	<i>31.</i> 2	1.88	6.65	150.0	28.19	200	315					
0909	22.1	710	19,7	1.70	6.65	147.2	28.20	200	058					
0912	221	712	18.5	1.40	6.65	143. G	20.25	175	184					
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Date:	121	a	15		
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Well ID:	MWW	Ď.	Sample ID:			Sample Time	:					
Casing diar	meter/type:	2" PX		·		ation: Center V	1	s Joh	0	Weather:	olly Cloudy	
	nterval(s): $\hat{\alpha}$	15 50		AMORE AND ASSESSMENT OF THE PROPERTY OF THE PR		g personnel: Pua	<u>ni Thornice</u>	<u>5 , Jon</u>	<u> </u>		and the state of t	
Total depth					***************************************		Plow MIGO	purse	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	and the second of the second o	·	
Initial depth	to water (w/o	pump): 27.	_/5		Water le		4501					
Final depth	to water (w/o p	pump):			Water qu	uality meter: Y	<u> SI 110</u>					
Measuring	point: North s	ide of casing	\$20 0,000,000,000	***************************************	Pump de	epth setting:	de grande de la companya de la comp		Pump type/n	nodel: Ma	news Ho	
·	T		1	T	Т	7		maasaanan oo	T	1	<u> </u>	
Time	Temp (°C)	Conductiv (mS/cm) or (µS/cm)	%DO	DO (mg/L)	рН	ORP (mV)	Water Level (feet btoc)	Flow Rate (L/min) or (mL/min)	Turbidity (NTU)	Purge Volume (L) or (mL)	A	dditional Comments
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Well ID:	MW-a)(Sample ID			Sample Time:	1335				
Casing dia	meter/type: D	2"RV			Well locati	ion: Store from	it, lave l		in the second	Weather: (Touty and - 50°
Screened in	nterval(s): 😞	25-30			Sampling	personnel: Wa.	ne T. Jo	hs B		advinos e la companione de la companione d	
Total depth	32'	-			Sampling	method: Low	Flow pre	em AUG	<u>e</u>		
Initial depth	to water (w/o	pump): 27	144		Water leve	el indicator: \mathcal{H} e	101	<i>j.</i> - <i>j</i>		ellettikannakrisissaaten viirtelettikijoiseksissaanna	
Final depth	to water (w/o j	pump): 27	7.7Ce		Water qua		dagaaan aan aa ah	ar an annual			
Measuring	point: North s	ide of casing	**************************************		Pump dep	th setting: $\mathcal{L}^{\mathcal{C}}$	1'		Pump type/m	nodel: Man	sour fro
valuus as or d 1994 Mean valuus kirinki	Temp	Conductiv (mS/cm) or		DO		ORP	Water Level	Flow Rate (L/min) or	Turbidity	Purge Volume	
Time	(°C)	(µS/cm)/	14,0	(mg/L)	PH /	259. T	(feet btoc)	(mL/min)	OK	(L) or (mL)	Additional Comments
BAL	3/3	1097		1/1/	6.60	239.1	28.41	150	MANUAL PROPERTY AND ADDRESS OF THE PROPERTY OF		-water tribia
1334	23. L	1	15.1	1.26	(e.50)			150_	DR NO		-very Gre particles
1327		1084	14.3	1.22	6.51	228.L	28.21	/50	OR .		
1330	25.9	1147	11.9	0.97	6.5	2115	2900	350	OR		
1333	26.2	1154	10.0	0.20	6.52	202.1	24.00	150	012_		probe on pump
economic grammatic de la Maria de magazant de Maria											
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	emerch Warranger (1900-1904) (1900-1904)		······································			etern erikkanisk och etternera erren agsackskan kresk erren erregiör					
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Date: 11/30/15	
	

Well ID:	MW-2	2	Sample ID:			Sample Time:	1358					
Casing diar	easing diameter/type: 2"PK Well location: 5W Corner Gress Weather: Clarky 50°											
Screened in	creened interval(s): Sampling personnel: Duang Thomas John Bonnes											
Total depth	tal depth: 35.50 Sampling method: Low Row micropolise											
Initial depth	itial depth to water (W/o pump): 49.34 Water level indicator: HPITON											
Final depth	inal depth to water (W/o pump): 55-50. 44.40 Water quality meter: YSI Pro											
Measuring	Measuring point: North side of casing Pump depth setting: 53 Pump type/model: Montsona Pro											
Time	Temp (°C)	Conductiv (mS/cm) or (µS/cm)) %DO	DO (mg/L)	рН	ORP (mV)	Water Level (feet btoc)	Flow Rate (L/min) or (mL/min)	Turbidity (NTU)	Purge Volume (L) or (mL)	Additional Comments	
1334	22.9,	1030	43.2	3,41	(0.46)	196.9	•	325	26.9		I Wayer levels low	
1337	24.4	1089	21.4	1,15	6.43	186.6	50.98	275	3/9		= Ce' of water in well	
1340	24.2	1089	13.2	1.10	6.45	- 170.0	50.71	205	946		-moster turbed check	
1343	24,5	1094	61.3	0.95	6,46	172.4	50,49	200	OVER		blank 103 NTU	
1346	24.1	185	10.90	0.91	6.47	166.0	49.70	175	949		- very fine purlicles in	
B49	23.9	1082	10.28	0.86	6.47	162.5	49.75	250	OVER		raising pump to see F	
1352	24.5	1096	9.5	0.78	6.47	156,5	49.75	150	OVER		Lubidits clears	
1355	24,6	/09/	9,2	0.77	6.40	139,0	49.89	300	OVER		- super Fine proficles	
AND THE SHAW CONTRACTOR											pump pulled to 51	
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Field Record of Well Purging and Sampling

Well ID:	MWS	3] Sample ID:			Sample Time:					
Casing dia	Casing diameter/type: 2"PK Well location: BFE Lot Weather: Rain, 50F										
Screened	creened intervel(s): 48-53 Sampling personnel: Ugune 7 & John B.										
	otal depth: 55 Sampling method: Low Flow Microsurse										
Initial dept	ultial depth to water (w/o pump): What the 42 Water level indicator: Water level indicator:										
Final depti	inal depth to water (w/o pump): 46.42 Water quality meter: YST Ro										
Measuring	point: North s	ide of casing	in Standing out of a complete motor discrete and a complete motor of the complete motor and a complete motor a	on the second	Pump der	oth setting: 50.5	5	the work of the third of the state of the special s	Pump type/n	nodel: 35	Monson Bo
rintender (del gra a est responsa a del conservir a del		regional houseassering him house transland (e		ng antonous analos and more services and		প্ৰসংগ্ৰহণী প্ৰসংগ্ৰহণ সভ্য নিৰ্ভাগৰ কৰিছিল আপত্ৰ প্ৰত্যাহন কৰিছিল কৰিছিল কৰিছিল কৰিছিল কৰিছিল কৰিছিল কৰিছিল ক	apa vaa areenaannaa areenaa ar	Territorio de la como de la compansión d	1		
	Temp	Conductiv	No. of Contraction of	80	***************************************	ORP	Water Level	Flow Rate	Was all autonia	Purge Volume	
Time	(°C)	(m3/cm)_or	%D O	(mg/L)	рН	(mV)	(feet bloc)	(Umin).or Initimized	Turbidity (NTU)	(L) or (mL)	Additional Comments
(334)	23,5	TOIT	29	1.00	681	(0.81	48.01	690H5	2796		
0839	22.5	620	17.7	1.54	6.78	-1796,4	47.80	3337	33.4	A CONTRACTOR CONTRACTOR OF THE PERSON OF THE	-orp seem to be affected
0338	103:0	630	15.8	1.34	6.78	-1324.7	4763	835	Rel	and the second s	by inrechall
799/	122.8	[G. D. D.	165 y Last	1.34	6.79	-1084-8	47.40	150	1902		
0844	TARR	1634	15.1	1.29	6.79	1860.7	47.35	Secretary and reserves to the secretary and the second	158		
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idealeta est e e este a tritata a recental	to formation and a simple control of the state of the sta		болот также (1 v 1 v 1 d 1 d 1 d 1 d 1 d 1 d 1 d 1 d	A subside Consumers of China's Little Chinases and American	and the second s	titik saattataan eeki araasaan oo uu uu uu uu uu uu uu uu uu ta aa	anna an tagairtí agus an	enter the second se	destruienten mesmanten er en enskied	**************************************	
Painte et publicación agrecament bacc	landig to the contract of the		en en er en	or the second poer transfer and a second		akan gaga paramana ara kata kara kara kara ka ga da ga parama kara minga ka panasa ka kara ka ka ka ka ka ka k	and from the first to be a power of the first to be a second of the first		and a second	AMERICAN CONTRACTOR STATES AND	
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Date:	01/15

Screened interval(s): 48-53 Sampling personnel: John Borner, Ware T Total depth: 55 Sampling method: Cow Flow mecaguse Initial depth to water (w/o pump): 9.81 Water level indicator: 17 erron Water quality meter: YST Pro											
Sampling method: Conv Place Properties											
Sampling method: Conv Place Properties	F										
Sampling method: Conv Place Properties	reened interval(s): 48-53 Sampling personnel: John Borner Ware T										
Water level indicator:	tal depth: 55 Sampling method: Low Flow mechopuge										
North side of casing											
North side of casing	nal depth to water (W/o pump): 21.74 Water quality meter: YSFR>										
Time (°C) (mS/cm) or (
Time (°C) (mS/cm) or (
9953 22.3 38.3 205 1.78 842 251.6 20.48 200 41.4 ~91/h damed con or	ments										
0956 82.6 533 16.5 1.39 7.18 236.8 21.10 250 48.8 0959 21.8 528 15.8 1.34 7.12 230.4 21.75 350 65.9 1002 23.9 546 12.9 1.077.11 224.4 22.01 200 53.5 1005 23.3 521 12.1 1.03 7.19 214.6 22.70 200 33.8											
0959 21.8 528 15.8 [.34 1.12 230.4 21.75 350 65.9] 1002 23.9 546 12.9 1.077.11 224.4 22.01 200 53.5 1005 23.3 521 12.1 1.03 7.19 214.6 22.70 200 33.8											
1002 33.9 546 12.9 1.077.11 224.4 22.01 200 53.5 1005 23.3 521 12.1 1.03 7.19 214.6 22.70 200 33.8											
1005 3.3 521 12.1 1.03 7.19 214.6 22.70 200 33.8											
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Date:	1/23/17

Casing diameter/type: 2" Well location: Infront of Hala Market Weather:	Clear, Warm 70°								
Screened interval(s): 2.5 - 35 Sampling personnel: U. Ganter A. Bugher									
Total depth: 35 Sampling method: Low-flow micropurge									
Initial depth to water (w/o pump): 22:10 Water level indicator: Geofice h									
inal depth to water (w/o pump): 22,34 Water quality meter: YSI									
Measuring point: North side of casing Pump depth setting: 28.5 Pump type/model:	Monsoon								
5 min Δ < 10% Δ < 10% Δ < 0.1 pH Δ < 0.3 ft < 1L/min < 0.5 L/r									
Time Temp (°C) (mS/cm) or (mS/cm) DO (mg/L) pH ORP (mV) Water Level (L/min) or (mL/min) (NTU) Purge (L/min) or (mL/min) (NTU) (L) or (m	ne Additional Comments								
1016 25.7 1.70 9.0 0.73 6.50 -100.7 22.50 200 9.79									
1019 26.1 1.71 7.50 0.65 6.48 -107.8 27.82 400 9.47									
1022 26.3 1.71 7.40 0.59 6.48 -106.7 22.85 500 9.20	Duplicale								
1025 26.4 1.72 6.9 0.65 6.48 - 111.7 23.05 350 8.91									
1028 26.8 1.73 6247 3.6 17.28 6.47 -117.4 23.03 150 11.19									
1031									

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Sheet	of
Date:	2/23/17

Well ID:	MV	-07	Sample ID:			Sample Time					
Casing dia	meter/type:	2"			Well location	on: Street si	de of 1	Narhet	2	Weather:	lear, Walm 750
Screened i	Casing diameter/type: 2" Well location: Street side of Market Weather: (lear, Warm 75° Screened interval(s): 2.5-35 Sampling personnel: W. Gamber A. Bugher										
Total depth	1:	35	122 : 3		Sampling r	nethod: Low-flo	w micropurge				
Initial depth	to water (v	v/o pump):	19.13		Water leve	l indicator:	Seutech				
Final depth	to water (w	v/o pump):	20.68	_	Water qual	lity meter:	YSI				
Measuring	point: Nort	h side of casi	ng		Pump dept	h setting:	6.5		Pump type/m	THE RESERVE TO SHARE THE PARTY NAMED IN COLUMN TWO IS NOT THE PARTY NAMED IN COLUMN T	500h
5 min	Δ < 10%	Δ < 10%			Δ < 0.1 pH		Δ < 0.3 ft	< 1L/min		< 0.5 L/min	Parameter Stabilization Limits (3 consecutive readings)
Time	Temp (°C)	Conductivity (mS/cm) or (µS/cm)	DO (%)	DO (mg/L)	рН	ORP (mV)	Water Level (feet btoc)	Flow Rate (L/min) or (mL/min)	Turbidity (NTU)	Purge Volume (L) or (mL)	Additional Comments
0920	22.4	1.11	16.7	1.33	6.59	-73.6	19.83	150	8.30		
0923	23.7	1.13	8.2	0.68	6.57	-84.9	201.18-4	150	8.37		
1926	23.8	1,14	5.1	0.42	6.57	-94.6	2021.3/wy	150	7.89		
17929	24.0	1.14	3.7	0.30	6.97	-95.6	20.63	150	5.89		
0932	24.0	1.15	2.4	0.24	6.57	-99.0	20.68	175	617		
0935								1//	0.,,		
0111											
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Date:	7/27/17

Well ID:	M	1-03	Sample ID:	MV	03	Sample Time:	1130			[
Casing diar	neter/type:				Well location	on: Behine	1 Mel	ong Sun	dwich	Weather: (Tear, Warm 75°
Screened in	nterval(s):	2.5 - 35			Sampling p		W. Gante	v A.	Dugher		
Total depth	:	35'			Sampling r	method: Low-flo	w micropurge		- Z		1
Initial depth	to water (v	w/o pump):	17.22		Water leve	el indicator:	reotech				
Final depth	to water (v	v/o pump):	17.44		Water qua		YSI				
Measuring	fleasuring point: North side of casing Pump depth setting: 26.5 Pump type/model: MUNSOON										
5 min	Δ < 10%	Δ < 10%			Δ < 0.1 pH		Δ < 0.3 ft	< 1L/min		< 0.5 L/min	Parameter Stabilization Limits (3 consecutive readings)
Time	Temp (°C)	Conductivity (mS/cm) or (µS/cm)	DO (%)	DO (mg/L)	рН	ORP (mV)	Water Level (feet btoc)	Flow Rate (L/min) or (mL/min)	Turbidity (NTU)	Purge Volume (L) or (mL)	Additional Comments
11:00	21.8	13.61	5,7	0.49	6.80	-6,8	17.65	400	10.99		
11:03	21.4	0.61	4.2	0.37	6.74	-5,4	ws 17.95	450	10.46		
11:026	71.9	0.60	2.9	0.26	6.74	- 27.2	17.47	4.50	8.74		
11:09	27.0	M.60	2.5%	0.22	6.78	-24.5	17.92	450	6.48		
11.12	21,4	0.60	2.0	0.18	6.79	-33.1	17.90	450	4.96		41
11:15	71.9	0.59	1.6	0.14	6.79	-37,2	17.98	450	379		
11	41.		1		0 - 7 - 1	7012	17.00	1,0	/ - /		
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Recorded By:	W. Ganter	

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Date:	2/12/17

Well ID:	Mu	1-04	Sample ID:	Mw.	04	Sample Time	1240				
Casing dia	meter/type:	211			Well locati	on: Beh	nd Me	hong Sc	udvich	Weather:	Clear, Warm 75°
Screened i	nterval(s):	2-35			Sampling p	personnel:	W. Comfer	A.	Bugher		
Total depth	:	35			Sampling r	method: Low-fl	ow micropurge		1		
Initial depth	to water (w/o pump):	16.91		Water leve	l indicator:	Geotech				
Final depth	to water (v	v/o pump):	16.99	8	Water qua		YSI				
Measuring	point: Nor	th side of casir	ng		Pump dept	th setting:	25.0		Pump type/m	odel: <i>Mo</i>	in500n
5 min	Δ < 10%	Δ < 10%			Δ < 0.1 pH		Δ < 0.3 ft	< 1L/min		< 0.5 L/min	Parameter Stabilization Limits (3 consecutive readings)
Time	Temp (°C)	Conductivity (mS/cm) or (µS/cm)	DO (%)	DO (mg/L)	рН	ORP (mV)	Water Level (feet btoc)	Flow Rate (L/min) or (mL/min)	Turbidity (NTU)	Purge Volume (L) or (mL)	Additional Comments
1215	22.4	9.90	49.4	3,49	6.82	67.7	16.63	500	13.7		
1718	2201	0.90	11.8	0.98	6.81	57.4	17.69	300	14.4		
1221	77.7	0.89	4.1	0.35	6.81	37.7	17.04	350	25.5		
1224	22.0	1.88	2.8	0.24	5.83	17.9	17.45	300	24.1		
1777	27.7	0.87	2.0	0.18	6.87	9.8	17.20	750	22.7		
1730	771	0.87	1 4	17.16	627	9.6	17.03	200	18.7		
160	2411	0.01	1,1	0.10	0.84	1.0	11107	200	1 11 -1		
							+				
											Casing, full of
											Water/ Water verente
											casing sery quickly
											Pumped out Castry:

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Date:	2/22	117

Well ID:	Mrs	1-05	Sample ID:	MJ.	05	Sample Tim	e: 0930				
Casing diar	meter/type:				Well locati	on: Buch, Co	nter Corner	ot 51	Vip Mall	Weather:	lear Worm 75°
Screened in	nterval(s):	2-39			Sampling p	personnel:	A. Buyle	1 W	Cante		
Total depth	1:	197 35	· ·		Sampling r	method: Low-f	low micropurge				
Initial depth	to water (v	v/o pump):	17.20		Water leve	el indicator:	Geolech				
Final depth	to water (w	v/o pump):	17,49		Water qua	lity meter:	YSI				
Measuring	point: Nort	h side of casir	ng		Pump dept	th setting:	27,9		Pump type/m	odel: Ma	2NS002
5 min	Δ < 10%	Δ < 10%			∆ < 0.1 pH		Δ < 0.3 ft	< 1L/min		< 0.5 L/min	Parameter Stabilization Limits (3 consecutive readings)
Time	Temp (°C)	Conductivity (mS/cm) or (µS/cm)	DO (%)	DO (mg/L)	рН	ORP (mV)	Water Level (feet btoc)	Flow Rate (L/min) or (mL/min)	Turbidity (NTU)	Purge Volume (L) or (mL)	Additional Comments
17900	21.6	0.78	46.0	4.02	6.75	79.1	17.56	200	37.8		
0903	73.2	0.84	37.0	3,05	6.70	83.4	17.58	400	42.4		
0906	23,3	0.85	33.7	2.85	6.69	85.2	17.69	400	33.3		
0909	23.5	0.87	32.1	2.82	6.67	87.5	17.38	450	17.7		
0912	23.4	0.87	36.0	2.52	6.67	88.8	17.85	200	14.0		
0915	23.3	19.90	27.5	2.32	6.69	914	17.76	200	9.80		
7.7			A 1 12	3.7.5			7.5.0			. Syel	
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Recorded By:	w. banter	

Sheet	of
Date:	2/21/17

Well ID:	Mw-	-06	Sample ID:	Mw	-06	Sample Time	: 1500	1			
	meter/type:	211	P		Well location	1: Wesler	n Edge	of Park	ing Lot	Weather: (Clear, Warm 75°
Screened i	interval(s):	2-3	5		Sampling pe	rsonnel:	N. bantir	At . 17 uj	hev		
Total depth	n:	35	40		Sampling me	ethod: Low-fl	ow micropurge				
nitial dept	h to water (v		33.47		Water level	indicator:	reotech				
Final depth	n to water (v	w/o pump): /	Von de	feit	Water qualit	y meter:	YSI			4.	
Measuring	point: Nor	th side of casin	g .		Pump depth	setting:	/		Pump type/m	odel: Mo	nsoon
5 min	Δ < 10%	Δ < 10%			Δ < 0.1 pH		∆ < 0.3 ft	< 1L/min		< 0.5 L/min	Parameter Stabilization Limits (3 consecutive readings)
Time	Temp (°C)	Conductivity (mS/cm) or (µS/cm)	DO (%)	DO (mg/L)	рН	ORP (mV)	Water Level (feet btoc)	Flow Rate (L/min) or (mL/min)	Turbidity (NTU)	Purge Volume (L) or (mL)	Additional Comments
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Casing diameter/type: 21' Well location: Harc Start				
Casing diameter/type: L Well location: Har Stor	e Parking L	ot	Weather: Col	d, Heavy lain 600
Screened interval(s): 20-39 Sampling personnel: 4 Total depth: 35 Sampling method: Low-flow	1 Gamber	A. Bucher		
Total depth: Sampling method: Low-flow	micropurge	,		
0	eolech			
Final depth to water (w/o pump): 28,55 Water quality meter:	'SI			
Measuring point: North side of casing Pump depth setting:		Pump type/m	odel:	
5 min Δ < 10% Δ < 10% Δ < 0.1 pH	Δ < 0.3 ft < 1L/m	nin	< 0.5 L/min	Parameter Stabilization Limits (3 consecutive readings)
Time I . I ma/gm of I I na I	Vater Level (feet btoc) Flow R (L/min (mL/m) or Turbidity	Purge Volume (L) or (mL)	Additional Comments
				Borler - Pent Casing
				Pump can not reach
				Water Column
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Well ID:	Mw	-08	Sample ID:	Mw.	-08	Sample Tim	e: 08:45				
Casing dia	meter/type:	2"			Well location	on: Jus ld	Tree Ser	VIIE-E	ntrance	Weather: (Cool, cloudy 60°
Screened i	nterval(s):	20,5	35.5		Sampling p	personnel:	U. Ganter	A B:	ngher		
Total depth	1:	36.5					low micropurge		/		
Initial depth	n to water (v	v/o pump):	16.60		Water leve	el indicator:	Geolech				
Final depth	to water (v	//o pump):	16:57		Water qua	lity meter:	YSI				
Measuring	point: Nort	h side of casir	ng		Pump dept	th setting:	76.31		Pump type/m	odel: M	lonsion
5 min	Δ < 10%	Δ < 10%			Δ < 0.1 pH		Δ < 0.3 ft	< 1L/min		< 0.5 L/min	Parameter Stabilization Limits (3 consecutive readings)
Time	Temp (°C)	Conductivity (mS/cm) or (µS/cm)	DO (%)	DO (mg/L)	рН	ORP (mV)	Water Level (feet btoc)	Flow Rate (L/min) or (mL/min)	Turbidity (NTU)	Purge Volume (L) or (mL)	Additional Comments
0823	21.6	0.90	8.6	0.69	6,49	221.7	1675	200	17.4		
0826	22.2	0.86	5.6	0.49	6.65	189.4	16.76	300	16.9		
0829	22.8	0.85	10.4	0.80	6.63	179.6	16.85	350	130		
0832	23.3	0.85	3.0	0.29	6.63	167.8	16.90	350	10.59		
0835	23.6	0.85	0.205	22.3	6.63	156.3	16.84	300	7.74	Ť.	
0838	2/10	0.07	0.20	7	0.07	1/6-/	10:01	-100	7:71	1.25gal	
0010								11		0.21gal	
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Well ID:	Mw.	-09	Sample ID:	Mw-	09	Sample Time		. 11			
Casing dia	meter/type:	211			Well locati	on: Applia	my Store	Ace light	drave for	Weather:	icel, Clear 62°
Screened i	nterval(s):	20-35			Sampling	personnel:	W. Gun	ter A	Bughir		
Total depth	n:	35			Sampling I	method: Low-fl	ow micropurge				
Initial depth	n to water (0.41		Water leve	el indicator:	Geotech				
Final depth	to water (v	v/o pump):	7.07.73		Water qua	lity meter:	YSI				
Measuring	point: Nor	th side of casi	ng		Pump dep	th setting:	8'		Pump type/m	odel: M	wsoon
5 min	Δ < 10%	Δ < 10%			Δ < 0.1 pH		Δ < 0.3 ft	< 1L/min		< 0.5 L/min	Parameter Stabilization Limits (3 consecutive readings)
Time	Temp (°C)	Conductivity (mS/cm) or (µS/cm)	DO (%)	DO (mg/L)	pH	ORP (mV)	Water Level (feet btoc)	Flow Rate (L/min) or (mL/min)	Turbidity (NTU)	Purge Volume (L) or (mL)	Additional Comments
0718	20.4	1.09	17.1	1.45	6.61	90.6	22.50	600	6.11		
0721	22.6	1.04	13.8	1.17	6.59	84.7	27.53	150	6.51		
0724	22.5	1.09	10.5	0.99	6.59	77.6	22.80	400	6.86		
0727	27.4	1.08	7.1	0.63	6.59	78.0	22.68	300	4.43		
0730	22,9	1.07	6.4	0.54	6.59	75.4	27.63	500	3.80		
0730	24.1	1.07	0 1	U.J.	0.71	1 /1 1	26.01	100	7200		
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Well ID:	Mw-		Sample ID:	Mv.							
Casing dia	meter/type:	2"			Well location	on: East 5	ide of	Parking	Lot	Weather:	Jorn, Clear 700
Screened i	nterval(s):	25-30			Sampling p	ersonnel:		1			
Total depth	n:	32			Sampling m	nethod: Low-flo	ow micropurge				
Initial depth	n to water (v	v/o pump):	26.24		Water level	I indicator:	Geotech				
Final depth	to water (w	v/o pump):	26.50		Water qual		YSI				
Measuring	point: Nort	h side of casir	ng		Pump depti	h setting: 2		745	Pump type/m	odel: Me	on soon
5 min	Δ < 10%	Δ < 10%			Δ < 0.1 pH		Δ < 0.3 ft	< 1L/min		< 0.5 L/min	Parameter Stabilization Limits (3 consecutive readings)
Time	Temp (°C)	Conductivity (mS/cm) or (µS/cm)	DO (%)	DO (mg/L)	рН	ORP (mV)	Water Level (feet btoc)	Flow Rate (L/min) or (mL/min)	Turbidity (NTU)	Purge Volume (L) or (mL)	Additional Comments
1312	26.7	1.86	12.7	1.02	6.34	- 37.1	26.74	350	55.7		
1315	26.6	1.83	5,6	0.39	6.31	- 34.1	26.70	300	41.1		
1318	27.2	1.85	2.7	0.71	6.30	-34.7	27.00	550	30.7		
1321	27.2	1.87	1.9	0.15	6.29	- 31.7	27.10	400	15.7		
1324	777	1,93	1.5	0.12	6.29	-37.9	27.18	350	13.1		
1/	6115	(11)	1.7	0.16	6121	11,	27.10	770	17.1		
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Well ID:	Mw	-21	Sample ID:	Mw-	71	Sample Tim	e: 0800				
Casing dia	meter/type:	211			Well locati	on: Infran	tot Andi	, Store		Weather:	ol Clear
Screened		25.3			Sampling p		W. Canter	A 1	Bugher		00 10 000 1
Total depti	n:	32			Sampling r	method: Low-f	low micropurge				
Initial dept	h to water (v		25.24		Water leve	el indicator:	Geof	ech			
greater and the	to water (w		29.46		Water qua	lity meter:	YSI				
		h side of casir	ng		Pump dep	th setting:		2.5	Pump type/m	odel: Mo	n500 n
5 min	Δ < 10%	Δ < 10%			Δ < 0.1 pH		Δ < 0.3 ft	< 1L/min		< 0.5 L/min	Parameter Stabilization Limits (3 consecutive readings)
Time	Temp (°C)	Conductivity (mS/cm) or (µS/cm)	DO (%)	DO (mg/L)	рН	ORP (mV)	Water Level (feet btoc)	Flow Rate (L/min) or (ml/min)	Turbidity (NTU)	Purge Volume (L) or (mL)	Additional Comments
0731	21.4	1.05	24.5	2.09	6.64	113.4	29.57	250	5.83		
0734	23.5	1.04	12.8	1.04	6-60	84.5	25.65	400	3.95		
0737	24.7	1.02	6-1	0.48	6.65	68.3	25.72	450	2.81		
0740	24.3	1.01	3.4	0.28	6.64	65.1	25.62	300	1.73		*
0743	24.5	1.01	2.3	0.17	6.65	57.3	25.40	800	1.56		
0746	24.8	1.01	1.5	0.13	6.65	49.8	25.69	250	1.44	0.3gal	
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Well ID:	M	v-22	Sample ID:	Mw-	72	Sample Time	1510				
Casing dia	meter/type:	48-5 55	211		Well location	E. Side	Parking	Lot-		Weather: 4	Jarm, Clear 600
Screened i	nterval(s):	98-5	3		Sampling pe	ersonnel:	1. Gantos	A. B.	wher		
Total depth	n:	55			Sampling me	ethod: Low-fle	ow micropurge	1			
Initial dept	to water (50.10		Water level	indicator:	Sweech				
Final depth	to water (v	v/o pump):	54.31		Water qualit	y meter:	YSI				
Measuring	point: Nor	th side of casin	ng		Pump depth	setting:			Pump type/m	odel:	
5 min	Δ < 10%	Δ < 10%			Δ < 0.1 pH		∆ < 0.3 ft	< 1L/min		< 0.5 L/min	Parameter Stabilization Limits (3 consecutive readings)
Time	Temp (°C)	Conductivity (mS/cm) or (µS/cm)	DO (%)	DO (mg/L)	рН	ORP (mV)	Water Level (feet btoc)	Flow Rate (L/min) or (mL/min)	Turbidity (NTU)	Purge Volume (L) or (mL)	Additional Comments
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Well ID:	Mn.	23		: M-	-23	Sample Time	1310				
Casing dia	meter/type:	2"			Well locati	on: Hair St	ove Park	no Lot		Weather:	Quin 630
Screened	interval(s):	48-	53		Sampling		W. Gaster	1 A.	Bughe-		
Total dept	h:	55			Sampling i	method: Low-fl					
Initial dept	h to water (44.45		Water leve	el indicator:	Seotech				
Final depti	n to water (w	v/o pump):	45.10		Water qua	lity meter:	YSI				
Measuring	point: Nor	th side of casi	ng		Pump dep	th setting: $5/$.0		Pump type/m	odel: Mon	SQO'A
5 min	Δ < 10%	Δ < 10%			Δ < 0.1 pH		Δ < 0.3 ft	< 1L/min		< 0.5 L/min	Parameter Stabilization Limits (3 consecutive readings)
Time	Temp (°C)	Conductivity (mS/cm) or (µS/cm)	DO (%)	DO (mg/L)	рН	ORP (mV)	Water Level (feet btoc)	Flow Rate (L/min) or (mL/min)	Turbidity (NTU)	Purge Volume (L) or (mL)	Additional Comments
1250	23.8	0.66	7.5	0.63	6.92	61.3	4677	450	22.0		
1253	23.9	0.66	7.6	0.65	6.95	39.2	46.72	500	above		
1256	23.7	0.66	8.7	0.74	6.96	25.9	47.56	250	76.2		
1259	23.6	0.67	6.6	0.54	6.94	16.1	46.78	300	38.7		
1302	24.2	0.68	5.9	0.48	6.94	12.9	47.10	300	20.4	.3gal	
	21.2			0.10			17:10	200	50.1	1941	
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Well ID:	MW	- 24	Sample ID:	Mw-	24	Sample Time	e: 1040				
Casing dia	meter/type:				Well locati	on: Oriel	lys Pari	king L	1	Weather:	lear Warm \$50
Screened i	nterval(s):	48-	53		Sampling	personnel:	W. Gant	ir A.	Brigher		
Total depth	1:	55	* # #		Sampling i	method: Low-f	low micropurge		/		
Initial deptl	n to water (v	w/o pump):	18.64		Water leve	el indicator:	Geolech				
	to water (v		73.99	4	Water qua		YSI				
-	Manager Auguste	th side of casir	ng		Pump dep	th setting: 5/			Pump type/m		25000
5 min	Δ < 10%	Δ < 10%			Δ < 0.1 pH		Δ < 0.3 ft	< 1L/min		< 0.5 L/min	Parameter Stabilization Limits (3 consecutive readings)
Time	Temp (°C)	Conductivity (mS/cm) or (µS/cm)	DO (%)	DO (mg/L)	рН	ORP (mV)	Water Level (feet btoc)	Flow Rate (L/min) or (mL/min)	Turbidity (NTU)	Purge Volume (L) or (mL)	Additional Comments
1009	23.8	0.257	53.3	4.38	8.11	134.5	18.34	400	14.87		
1008	24.7	0,428	24.0	1.97	7.13	136.8	19.60	125	19.1		
Dil	24.6	0.53	180	1.48	7.176	134.0	20.14	150	21.7		
1014	24,4	0.56	17.1	1.52	7.03	132.7	20.94	300	19,9		
1017	24.6	19.58	15.6	1,29	7.01	131.3	21.22	200	16.7		
1620	24.7	0.58	13.5	1.11	7.02	133.1	21.48	350	14.9		
1023	25.0	19.58	11.7	0.97	6.99	131.6	22.79	150	14.4		
1026	24.9	0.59	10.9	0.91	7.00	131.7	23.64	100	12.7		
1029	25.17	0.58	10.7	0.89	7.01	131.9	24.46	250	12.8		
1032	25.1	0.57	11.2	0.83	7.04	131.5	25,62	250	14.3		
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Well ID:	Mu	- 25	Sample ID:	Mw-	29	Sample Time				[
Casing dia	meter/type:	2"			Well locatio	n: Apola	nce Stor	e		Weather:	Mary Clear, Worm 580
Screened i	nterval(s):		28		Sampling pe		W. Ganter	1.0	voler		, , , , , , , , , , , , , , , , , , , ,
Total depth	ղ:	30			Sampling m	ethod: Low-fl	ow micropurge		1		
Initial depti	n to water (w/o pump):	29.42		Water level		rotech				
Final depth	to water (v	w/o pump):	/		Water qualit		YSI				
Measuring	point: Nor	th side of casir	ng		Pump depth	setting:	/		Pump type/m	odel:	
5 min	Δ < 10%	Δ < 10%			Δ < 0.1 pH		Δ < 0.3 ft	< 1L/min		< 0.5 L/min	Parameter Stabilization Limits (3 consecutive readings)
Time	Temp (°C)	Conductivity (mS/cm) or (µS/cm)	DO (%)	DO (mg/L)	рН	ORP (mV)	Water Level (feet btoc)	Flow Rate (L/min) or (mL/min)	Turbidity (NTU)	Purge Volume (L) or (mL)	Additional Comments
											No water
											Unable to Pump of Bail from Well
											No Samples Taken
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Well ID:	MW	-01	Sample ID:	MW	-01	Sample Time	0830				
Casing dia	meter/type:		2 11		Well locati	on: Ilala	(market	front		Weather:	poler 80° Clear
Screened	nterval(s):	1	19-39		Sampling	personnel: 4	16/10				
Total depti	ո:		39		Sampling i	method: Low-fl	ow micropurge				
Initial dept	n to water (v	v/o pump):	24.24		Water leve	el indicator:	lteron				
Final depth	to water (w	//o pump):	25.72		Water qua	lity meter:	YSI				
Measuring	point: Nort	h side of casir	ng		Pump dep	th setting:	30		Pump type/m	odel: 59	Monsoon
5 min	Δ < 10%	Δ < 10%			Δ < 0.1 pH		∆ < 0.3 ft	< 1L/min		< 0.5 L/min	Parameter Stabilization Limits (3 consecutive readings)
Time	Temp (°C)	Conductivity (mS/cm) or (µS/cm)	DO (%)	DO (mg/L)	рН	ORP (mV)	Water Level (feet btoc)	Flow Rate (L/min) or (mL/min)	Turbidity (NTU)	Purge Volume (L) or (mL)	Additional Comments
0790	25.24	1.363	74.1	5.80	6.59	-166.4	350-20	29.62	27.5		
0799	25.54	1.368	19.0	1.54	6.96	-149.7	25.94	379	13.6		
0800	25.71	1.367	14.9	1.21	6.55	-146-3	26.34	400	10.88		
0809	29.83	1, 364	12.3	0.49	6.54	-196.3	26.36	400	7.68		
0810	25.94	1.362	12.0	0.97	6.94	-198.3	16.59	340	6.50		
0815	26.01	1.362	13.4	1.08	6.54	-146.9	76.59	350	4.42		
0820	26.08	1.365	13.0	1.05	6.59	141.3	26.64	350	3.67		
		1.707	11-	,	0.7		- CD - VI	7,0	7		

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12/16

Well ID:	Mi	1-02	Sample ID:	Mw-	02	Sample Time	1340				11 - 11 1
	meter/type:	2"	1 2 2 5		Well location		- / /			Weather:	Rain 90°
Screened i		-	29-39		Sampling p	ersonnel:	JB/UG	*			
Total depth	1:		35		Sampling r	nethod: Low-fl	ow micropurge				
Initial depth	n to water (v	v/o pump):	21.65		Water leve	l indicator:	Heron				
	to water (w		23.86		Water qua	lity meter:	YSI				
		h side of casi	ng		Pump dept	h setting:	30		Pump type/m	odel: 55	Monsgon
5 min	Δ < 10%	Δ < 10%			Δ < 0.1 pH		Δ < 0.3 ft	< 1L/min		< 0.5 L/min	Parameter Stabilization Limits (3 consecutive readings)
Time	Temp (°C)	Conductivity (mS/cm) or (µS/cm)	(%)	DO (mg/L)	рН	ORP (mV)	Water Level (feet btoc)	Flow Rate (L/min) or (mL/min)	Turbidity (NTU)	Purge Volume (L) or (mL)	Additional Comments
1305	23.88	1.042	396.5	31.18	6.83	-202.5	225000	45,00%	103400		
1310	23.88	1.040	47.6	3.72	15.79	-222.4	25.04	300	-32.0		
1315	24.10	1.037	18.6	1.94	6.79	-203.2	75.34	375	55.0		
1320	24.45	1.035	12.9	1.07	6.76	-200.8	29.54	375	34.5		
1325	24.58	1.033	12.1	1.01	6.76	-204.6	25.54	400	27.0		
1330	24.67	1.632	11.3	0.93	6.77	-192.7	25.56	375	22.3		
1710	1 .01	1.0/4	11.7	0-17	6.77	-1141/	41.10	///	24.1		
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Recorded By:	W 10 mile.

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sing dia	neter/type:	7	11		Well locati	on: Be	hind Me	Long		Weather:	00000 F 1000 Homidity Sunny
	nterval(s):		25-35		Sampling p		116/18			Weather.	soot working awing
al depth			39				low micropurge	ı			
al depth	to water (v	v/o pump):	20.80		Water leve	el indicator:	Heron				
al depth	to water (w	ı/o pump):	21.04		Water qua	lity meter:	YSI				
asuring	point: Nort	h side of casin	ıg		Pump dep	th setting:	30		Pump type/m	nodel:	
5 min	Δ < 10%	Δ < 10%			Δ < 0.1 pH		∆ < 0.3 ft	< 1L/min		< 0.5 L/min	Parameter Stabilization Limits (3 consecutive readings)
ime	Temp (°C)	Conductivity (mS/cm) or (µS/cm)	DO (%)	DO (mg/L)	рН	ORP (mV)	Water Level (feet btoc)	Flow Rate (L/min) or (mL/min)	Turbidity (NTU)	Purge Volume (L) or (mL)	Additional Comments
10	23.54	0.537	206.3	12.94	6.89	38.5	21.34	300	71		
15	17.21	0.531	49.8	3.75	6.58	42.9	21.39	390	112.0		
0	23.36	0.532	34.4	2.92	6.64	40.5	21.41	350	95.2		
15	23.41	0.533	30.6	2.57	6.71	39.2	21.44	350	82.3		
30	23.22	0,535	24.9	2.12	6.72	43.5	21.47	390	44.5		
35	23.20	0.536	20,2	1.71	6.73	42.5	21.48	350	32.3		
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lization Limits (3 consecutive readings)
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Well ID:	M_{\sim}	-05	Sample ID:	My	-09	Sample Time	1430			[
Casing dia	meter/type:	2"			Well location	on: Beling	1 Me Lou	ng		Weather:	90 - 1000 it
Screened i	nterval(s):	25.5	- 39.90)	Sampling p	ersonnel:	116/18	2			
Total depth	1:	39.	.5		Sampling r	nethod: Low-flo	ow micropurge	1			
Initial depth	n to water (v	v/o pump):	21.60		Water leve	l indicator:	Heron				
Final depth	to water (w	//o pump):	22.31	1	Water qua	lity meter:	YSI				
Measuring	point: Nort	h side of casir	ng		Pump dept	h setting:	30		Pump type/m	odel: 55	Man 500 9
5 min	Δ < 10%	Δ < 10%			Δ < 0.1 pH		Δ < 0.3 ft	< 1L/min		< 0.5 L/min	Parameter Stabilization Limits (3 consecutive readings)
Time	Temp (°C)	Conductivity (m\$/cm) or (µS/cm)	DO (%)	DO (mg/L)	рН	ORP (mV)	Water Level (feet btoc)	Flow Rate (L/min) or (mL/min)	Turbidity (NTU)	Purge Volume (L) or (mL)	Additional Comments
1400	24.39	1.300	65.3	5.29	6.54	48.7	27.08	300	1677Av		Wester 13 ovange from
1405	23.19	1.327	27.9	2.36	6.42	23.5	22.07	250	192010	1	injection
1410	23.63	1.329	18.5	1.56	6.45	2.1	22.10	300	1511 as		,
1415	23.75	1.319	15.9	1.33	6,47	- 4.5	22.14	300	117700		
1420	23.85	1.313	14.1	1.18	6.47	-9.0	22.06	250	775av		
1425	23.98	1.309	12.7	1.07	6.47	-10.8	22.11	390	699 av		
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Well ID:	Mn	-6	Sample ID:	plu	-6	Sample Time	: 0920					
Casing dia	meter/type:	2"			Well location: Weather:							
Screened i	nterval(s):				Sampling personnel:							
Total depth	n:				Sampling method: Low-flow micropurge							
Initial deptl	n to water (v	w/o pump):	33.80		Water level indicator:							
Final depth	to water (w	v/o pump):	Dry		Water quality meter: YSI							
Measuring	point: Nort	th side of casin	g /		Pump depth setting: Pump type/model:							
5 min	Δ < 10%	Δ < 10%			Δ < 0.1 pH		Δ < 0.3 ft	< 1L/min		< 0.5 L/min	Parameter Stabilization Limits (3 consecutive readings)	
Time	Temp (°C)	Conductivity (mS/cm) or (µS/cm)	DO (%)	DO (mg/L)	рН	ORP (mV)	Water Level (feet btoc)	Flow Rate (L/min) or (mL/min)	Turbidity (NTU)	Purge Volume (L) or (mL)	Additional Comments	
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Well ID:	MW	-7	Sample ID:	Mw-	7	Sample Time	1300				
Casing dia	meter/type:				Well location	1: BFER	ock Uub	Purkay	Lot	Weather: P	JHOT-90:F
Screened i	nterval(s):		20-39		Sampling pe	ersonnel: W	6 JTB				
Total depth	1:		35		Sampling me	ethod: Low-fl	ow micropurge				
Initial depth	n to water (v	w/o pump):	29.43		Water level	indicator:	leven				
Final depth	to water (v	v/o pump):	29.7/		Water qualit	y meter:	YSI				
Measuring	point: Nor	th side of casir	ng '		Pump depth	setting:			Pump type/m	odel: 55	Mousson
5 min	Δ < 10%	Δ < 10%			Δ < 0.1 pH		Δ < 0.3 ft	< 1L/min		< 0.5 L/min	Parameter Stabilization Limits (3 consecutive readings)
Time	Temp (°C)	Conductivity (mS/cm) or (µS/cm)	DO (%)	DO (mg/L)	рН	ORP (mV)	Water Level (feet btoc)	Flow Rate (L/min) or (mL/min)	Turbidity (NTU)	Purge Volume (L) or (mL)	Additional Comments
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sing dia	meter/type:	2 11			Well location	1:				Weather:	
eened i	nterval(s):			/	Sampling pe	ersonnel:		/			
al depth	1:				Sampling me	ethod: Low-fl	ow micropurge				
al depth	to water (v	w/o pump):			Water level i	indicator:					
al depth	to water (v	v/o pump): /			Water qualit	y meter:	YSI /				
suring	point: Nort	th side of casin	g		Pump depth	setting:			Pump type/m	odel:	
5 min	Δ < 10%	Δ < 10%	17 7		∆ < 0.1 pH		∆ < 0.3 ft	< 1L/min		< 0.5 L/min	Parameter Stabilization Limits (3 consecutive readings)
ime -	Temp (°C)	Conductivity (mS/cm) or (µS/cm)	DO (%)	DO (mg/L)	рН	ORP (mV)	Water Level (feet btoc)	Flow Rate (L/min) or (mL/min)	Turbidity (NTU)	Purge Volume (L) or (mL)	Additional Comments
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Well ID:	Mw	-09	Sample ID:	Mw-	09	Sample Time	1000				
Casing dia	meter/type:	2			Well locati	on: Ace	Hardvar	a Lot		Weather:	Clear, Breeze 82°
Screened i	nterval(s):	20-	-35		Sampling	personnel:	W6178				
Total depth	n:	35			Sampling i	method: Low-flo	ow micropurge				
Initial depth	n to water (v	v/o pump):	24.33		Water leve	el indicator:	Heron				
Final depth	to water (w	v/o pump):	25.36		Water qua	lity meter:	YSI				
Measuring	point: Nort	th side of casir	ng		Pump dep	th setting:			Pump type/m	odel: 55	Monsoon
5 min	Δ < 10%	Δ < 10%			Δ < 0.1 pH		∆ < 0.3 ft	< 1L/min	×	< 0.5 L/min	Parameter Stabilization Limits (3 consecutive readings)
Time	Temp (°C)	Conductivity (mS/cm) or (µS/cm)	DO (%)	DO (mg/L)	рН	ORP (mV)	Water Level (feet btoc)	Flow Rate (L/min) or (mL/min)	Turbidity (NTU)	Purge Volume (L) or (mL)	Additional Comments
0920	23.84	1.071	24.7	1.98	6.68	-13.1	29.71	200	120.0		
0925	23.68	1.065	18.0	1.52	6.51	10.6	25.18	300	106.4		
0930	23.64	1.098	14.4	1.21	6.53	10.3	\$245.23	250	1240		
0935	23.86	1.096	11.6	0.97	6.56	8-2	25.29	300	125.0		
0940	24.04	1.048	10.0	0.83	6,99	-7.8	29.31	225	94.3		
0945	24.06	1.049	9.2	0.77	6.98	7.7	15 39	300	84.7		
0990	24.14	1-042	71	0:60	6.59	9.0	25.46	300			
0170	57117	1-1)74	1.1	UIBU	611	7.0	41.16	100	56.0		

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Ground Water Sampling Data Sheet + 1100 5/24/18 MNA Jones Road Ground Water Plume Superfund Site, Houston, Harris County, Texas Mw-20 Sample Time: Well ID: Sample ID: Casing diameter/type: Well location: Weather: 20-32.9 Screened interval(s): Sampling personnel: 29.63 Total depth: Sampling method: Low-flow micropurge Initial depth to water (w/o pump): Water level indicator: Itoron Final depth to water (w/o pump): Water quality meter: YSI Measuring point: North side of casing Pump depth setting: Pump type/model: Δ < 10% Δ < 10% 5 min Δ < 0.1 pH Δ < 0.3 ft < 1L/min < 0.5 L/min Parameter Stabilization Limits (3 consecutive readings) Conductivity Flow Rate Purge Temp DO DO ORP Water Level Turbidity Time (mS/cm) or pH (L/min) or **Additional Comments** Volume (%) (°C) (mg/L) (mV) (feet btoc) (NTU) (µS/cm) (mL/min) (L) or (mL) verave

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						Ground 1	Water Samp	ling Data S	Sheet		5/23/18
Well ID:	Mw	21	Sample ID:	Mr	-2/	Sample Time	0830] [
Casing dia	meter/type:	21	i.		Well loca	ion: Eite	Parking	lot		Weather:	Let, humid; Sun 90°
Screened i	nterval(s):				Sampling	personnel:	WG/18				
Total depth	1:	24.7	73		Sampling	method: Low-fle	ow micropurge)			
Initial depth	to water (w/o pump):	27.11		Water lev	el indicator:	Heron				
Final depth	to water (v	w/o pump):	27.50		Water qu	ality meter:	YSI				
Measuring	point: Nor	th side of casir	ng		Pump dep	oth setting:			Pump type/m	nodel: 55	Mongoon
5 min	Δ < 10%	Δ < 10%			Δ < 0.1 pH		Δ < 0.3 ft	< 1L/min		< 0.5 L/min	Parameter Stabilization Limits (3 consecutive readings)
Time	Temp (°C)	Conductivity (mS/cm) or (µS/cm)	DO (%)	DO (mg/L)	рН	ORP (mV)	Water Level (feet btoc)	Flow Rate (L/min) or (mL/min)	Turbidity (NTU)	Purge Volume (L) or (mL)	Additional Comments
0805	25.06	1.042	556	4.42	6.67	-41,6	29.68	300	02		well not rechirering
0810	25.34	1.017	21.5	1.75	6.61	-60.3	28.62	357	2716au		Pull num and bart
0 5/0				.,,	2101	00.7	20.02	770	Criozo		ion strange
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Well ID:	My	- 22	Sample ID	Mw-2	2	Sample Time:	0945				
Casing dia	meter/type:	2"			Well location	n: 5,/e	Porhiby	lot		Weather:	Clear, Hot 900
Screened i	nterval(s):	48.	93		Sampling pe	ersonnel:	W6/1	B			7 77
Total depth	n:	55			Sampling m	ethod: Low-flo	w micropurge				
Initial depti	n to water (w/o pump):	46.04		Water level		Heren				
Final depth	to water (v	v/o pump):	47.00	5	Water qualit	ty meter:	YSI				
Measuring	point: Nor	th side of casir	ng		Pump depth	setting:			Pump type/m	odel:	
5 min	Δ < 10%	Δ < 10%			Δ < 0.1 pH		Δ < 0.3 ft	< 1L/min		< 0.5 L/min	Parameter Stabilization Limits (3 consecutive readings)
Time	Temp (°C)	Conductivity (mS/cm) or (µS/cm)	DO (%)	DO (mg/L)	рН	ORP (mV)	Water Level (feet btoc)	Flow Rate (L/min) or (mL/min)	Turbidity (NTU)	Purge Volume (L) or (mL)	Additional Comments
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Well ID	WH	-23	Sample ID:	Mw-2.	3	Sample Time					
Casing dia	meter/type:	2"			Well location	on: BFE	Rock Cla	b lank	y lot	Weather: PC	1 Hot 90 F W 1000 % Homed
Screened	interval(s):	48-	47		Sampling p	ersonnel: V	10 24	Th	e cont	Contry	5
Total dept	h:	55			Sampling r	nethod: Low-f	low micropurge			.1	
Initial dept	h to water (w/o pump):	45.30		Water leve	l indicator:	leva				
Final dept	n to water (v	v/o pump):	46.17	3	Water qua	lity meter:	YSI			-1)	
Measuring	point: Nor	th side of casir	ng		Pump dept	h setting:	50'		Pump type/m	odel: 55 h	Mega-Marson
5 min	Δ < 10%	Δ < 10%			Δ < 0.1 pH		Δ < 0.3 ft	< 1L/min		< 0.5 L/min	Parameter Stabilization Limits (3 consecutive readings)
Time	Temp (°C)	Conductivity (mS/cm) or (µS/cm)	DO (%)	DO (mg/L)	рН	ORP (mV)	Water Level (feet btoc)	Flow Rate (L/min) or (mL/min)	Turbidity (NTU)	Purge Volume (L) or (mL)	Additional Comments
1200	26.52	0.762	120.1	9.23	883	71.1	47.72	300	17.1		
1209	26.04	0.664	44.5	3.96	6.63	38.0	47.73	250	29.0		
1210	26.59	0.699	36.1	2.37	6.74	260	47.68	250	1170		
1215	27.46	0.670	18.5	1.45	6.78	14.4	47.44	200	131.0		
1220	27.79	0.682	11.4	0.89	6.18	-7.3	47.26	300	124.0		
1225	27.73	0.686	9.7	0.76	6.78	~15.8	47.25	300	95.0		
1230					-/-	110	(1.4)	, , ,	17.0		
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						Ground V	Vater Samp	ling Data S	Sheet		5/12/18
Well ID:	Mu	-24	Sample ID:	Mw-	24	Sample Time:	0815				
Casing dia	meter/type:	2"			Well locati	on: Olielly	s Parkin	e Lot		Weather:	85° sun Humid
Screened i	interval(s):	48-	53		Sampling		WG/1	B			
Total depth	n:	55			Sampling i	method: Low-flo	w micropurge				
nitial deptl	h to water (v	w/o pump):	21.74		Water leve	el indicator:	Heron				
inal depth	n to water (v	v/o pump):	39.45		Water qua	lity meter:	YSI				
Measuring	The same of the sa	th side of casi	ng		Pump dep	th setting: 51	/		Pump type/m	odel: 5	3 Geojub
5 min	Δ < 10%	Δ < 10%			Δ < 0.1 pH		Δ < 0.3 ft	< 1L/min		< 0.5 L/min	Parameter Stabilization Limits (3 consecutive readings)
Time	Temp (°C)	Conductivity (mS/cm) or (µS/cm)	DO (%)	DO (mg/L)	рН	ORP (mV)	Water Level (feet btoc)	Flow Rate (L/min) or (mL/min)	Turbidity (NTU)	Purge Volume (L) or (mL)	Additional Comments
5745	24.96	0.526	160.6	12.97	7.19	- 34.4	23.49	329	27.8		Little to no
7790	24.96	0-585	32.5	2.62	7.07	-33.8	24.57	300	81.8		Vecharge
7799	25.15	0.591	16.6	1.36	7.04	-37.0	25.96	250	65.8		/
1800	29.22	0.996	12.2	1.00	7.03	-46.3	27.64	300	48.6		
0805	25.42	0.598	10.6	0.87	7.00	-48.6	28.74	300	36.8		
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						Ground V	Water Samp	ling Data S	Sheet		5/24/19
Well ID:	M	v-25	Sample ID	Mw	-25	Sample Time:	-				
Casing dia	meter/type:				Well location	on:	Lente	VI Apo	liance	Weather:	Clear, Hot 890
Screened i	interval(s):				Sampling p	personnel:	WG	173"			I
Total depth	n:		29.5	0	Sampling r	nethod: Low-flo	w micropurge	9			
Initial depti	h to water (w/o pump):	29.1	13	Water leve	el indicator:	Heran				
Final depth	to water (w/o pump):	29,0	15	Water qua	lity meter:	YSI				
Measuring	point: Nor	th side of casir	ng		Pump dept	th setting:			Pump type/m	odel:	
5 min	Δ < 10%	Δ < 10%			∆ < 0.1 pH		Δ < 0.3 ft	< 1L/min		< 0.5 L/min	Parameter Stabilization Limits (3 consecutive readings)
Time	Temp (°C)	Conductivity (mS/cm) or (µS/cm)	DO (%)	DO (mg/L)	рН	ORP (mV)	Water Level (feet btoc)	Flow Rate (L/min) or (mL/min)	Turbidity (NTU)	Purge Volume (L) or (mL)	Additional Comments
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Well ID:	Mu	-01	Sample ID			Sample Time:	1040			I I	
Casing dia	meter/type:	2"			Well locati		1	Palal 1	Markel	Weather:	Clouds 800
Screened i		2.	5-39		Sampling	personnel:	W6	109			
Total depth	1:	35			Sampling	method: Low-flo	w micropurge)			
Initial depth	to water (v	w/o pump):	21.35		Water leve	el indicator:	lteron				
Final depth			23.08		Water qua		YSI	•			
Measuring		th side of casir	ng		Pump dep	th setting: 2	8.9		Pump type/m	odel: Mons	5001
5 min	Δ < 10%	Δ < 10%			Δ < 0.1 pH		Δ < 0.3 ft	* < 1L/min		< 0.5 L/min	Parameter Stabilization Limits (3 consecutive readings)
Time	Temp (°C)	Conductivity (mS/cm) or (µS/cm)	DO (%)	DO (mg/L)	pН	ORP (mV)	Water Level (feet btoc)	Flow Rate (L/min) or (mL/min)	Turbidity (NTU)	Purge Volume (L) or (mL)	Additional Comments
1018	24.42	1.537	102.8	7.79	6.68	-125.5	21.96	400	13.3		
1021	25.16	1.560	10.3	0.82	6.63	-134.6	21.50	200	11.6		
1024	29.70	1.579	5.5	0.49	6-61	-135.5	21.42	280	11.0		
1027	25.63	1.976	4.0	0.32	6.61	-132.4	22.10	280	10.40		
1030	25,54	1.570	3.7	0.30	6.61	-135.3	22.20	280	9.63		
1033	25.46	1.566	3.2	0.26	6,60	-136.9	22.35	300	7-63		
1036	25.45	1.563	2.8	0.23	6.60	-139.0		300	7.55		
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Well ID:	M	v-02	Sample ID):		Sample Tim	e: 0945				
Casing dia	meter/type:	2	11		Well location	on:	Jones	ld		Weather:	Cloudy 80°
Screened	interval(s):		1.5-35		Sampling p	ersonnel:	461	09			
Total depti	h:	35	100		Sampling r	nethod: Low-f	low micropurge)			
Initial dept	h to water (v		8,20		Water leve	l indicator:	Iteron				
Final depth	n to water (v	v/o pump): 🗦	0.12		Water qua		YSI				
Measuring		th side of casir	ng		Pump dept	h setting:	26.9		Pump type/m		novin
5 min	Δ < 10%	Δ < 10%			Δ < 0.1 pH		Δ < 0.3 ft	< 1L/min		< 0.5 L/min	Parameter Stabilization Limits (3 consecutive readings)
Time	Temp (°C)	Conductivity (mS/cm) or (µS/cm)	DO (%)	DO (mg/L)	рН	ORP (mV)	Water Level (feet btoc)	Flow Rate (L/min) or (mL/min)	Turbidity (NTU)	Purge Volume (L) or (mL)	Additional Comments
0728	23.77	1.559	63.1	5.14	7.01	18.5	19.1	200	15.8		
0931	23.10	1,559	13.3	1.11	6.89	8.3	19,21	240	31.6		
0933	23.49	1.570	6.5	0.54	6.87	3.9	19.30	200	29.1		
0936	23 94	1.566	5.0	0.42	1.85	-1.6	19,41	240	23.3		
0939	23.59	1.561	4.6	1.39	6.85	-7.6	19.51	300	19.9		
1942	23.64	1.551	4.2	0.35	6.84	-13.6	19.50	300	19.9		
Union	- 7,10,1	1.771		0.77	0.01	17.0	11170	200	1 (1)		
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Well ID:	M	w-03	Sample ID:			Sample Time	1310			Г	
	meter/type:	7	11		Well location	,)	hind	Mehons	,	Weather:	Clouds 80°
	nterval(s):		1.5 - 35		Sampling p		46/1	99			
Total depti			35			nethod: Low-fle	ow micropurge				
Initial dept	n to water (w/o pump):	16.43		Water leve	l indicator:	Heron				
Final depth	to water (v	v/o pump):	16.64		Water qua		YSI				
Measuring		th side of casir	ng		Pump dept	h setting: 2	6.5		Pump type/m		nipen
5 min	Δ < 10%	Δ < 10%			∆ < 0.1 pH		Δ < 0.3 ft	< 1L/min		< 0.5 L/min	Parameter Stabilization Limits (3 consecutive readings)
Time	Temp (°C)	Conductivity (mS/cm) or (µS/cm)	DO (%)	DO (mg/L)	рН	ORP (mV)	Water Level (feet btoc)	Flow Rate (L/min) or (mL/min)	Turbidity (NTU)	Purge Volume (L) or (mL)	Additional Comments
1248	21.96	0.982	40.7	3.43	7.08	- 85.6	16.78	300	3193 au		
1251	22.13	0.945	8.6	0.74	6.83	-82.7	16.78	300	1558 av		
1254	22.50	0.937	6.3	0.54	6.72	-63.7	16.78	300	782		
1257	22.43	0.931	6.4	0.55	6.68	-97.5	16.79	300	600		
1300	42.15	0.918	6.7	0.58	6.67	-51.4	16.78	200	80		
1303	22.44	0.918	7.0	0.60	6.64	-46.1	16.78	300	38		
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	11/6/18

Well ID:	M.	v-04	Sample ID:			Sample Time	1400				
Casing dia	meter/type:	2"			Well locati	on:	Be	hind 1	Nelong	Weather:	Cloudy 800
Screened i	nterval(s):	2-35			Sampling p	personnel:	W6/	DT			
Total depth	1:	3	5		Sampling r	method: Low-flo	ow micropurge				
Initial depti	n to water (v	v/o pump):	15.66		Water leve	l indicator:	Heron			1	
Final depth	to water (v	v/o pump):	15.63	ź	Water qua	lity meter:	YSI				
Measuring	point: Nor	h side of casi	ng		Pump dept	th setting:	9.0		Pump type/m	odel: /	lousoon
5 min	Δ < 10%	Δ < 10%			Δ < 0.1 pH		∆ < 0.3 ft	< 1L/min		< 0.5 L/min	Parameter Stabilization Limits (3 consecutive readings)
Time	Temp (°C)	Conductivity (mS/cm) or (µS/cm)	DO (%)	DO (mg/L)	рН	ORP (mV)	Water Level (feet btoc)	Flow Rate (L/min) or (mL/min)	Turbidity (NTU)	Purge Volume (L) or (mL)	Additional Comments
1343	21.51	2.417	111.6	9.15	6.77	-128.3	1,	300	29.3		WLM 2550es
1346	21.20	2.404	11.0	0.95	6.73	-159.1		200	27.5		
1349	21.43	2.419	3.8	0.32	6.70	-160.6	17.87	300	19.3		
1352	21.70	2.434	2.7	0.23	6.68	-162.9	17.87	300	18.1		
1355	2187	7 446	2.3	0.20	6.68	-1157	17.89	320	18.0		
1354	21.66	2.436	2.2	0.19	6.68	-107/	17.80	280	17.3		
1110	(1100	2.170	6.6	0.11	000	- 102.1	11.00	200	110/		
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Date:	
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Well ID:	Mw	-05	Sample ID:	Mw.	05	Sample Time	1600	f			
Casing dia	meter/type:				Well locat	on:	Del	hind A	ledond	Weather:	80° douds
Screened	interval(s):	2-3	5		Sampling	personnel:	461	04	/		
Total dept	h:	39			Sampling	method: Low-fl	ow micropurge				
Initial dept	h to water (v	w/o pump):	6.20		Water leve	el indicator:	Heron				
Final depti	h to water (w	v/o pump):	6.36		Water qua	lity meter:	YSI				
Measuring	point: Nort	th side of casi	ng		Pump dep	th setting:	28.0		Pump type/m	odel: Mar	15000
5 min	Δ < 10%	Δ < 10%			Δ < 0.1 pH		Δ < 0.3 ft	< 1L/min		< 0.5 L/min	Parameter Stabilization Limits (3 consecutive readings)
Time	Temp (°C)	Conductivity (mS/cm) or (µS/cm)	DO (%)	DO (mg/L)	рН	ORP (mV)	Water Level (feet btoc)	Flow Rate (L/min) or (mL/min)	Turbidity (NTU)	Purge Volume (L) or (mL)	Additional Comments
1540	21.96	1.106	144.1	10.49	6.76	-18.9	16.44	350			
1943	21.58	1.090	27.4	2.37	6.65	.15.4	16.93	300			
1946	21.57	1.080	29.8	2.25	6.59	-12.6	16.55	300			
1549	21.55	1,071	22.1	1.94	6.56	~ 12.6	11.18	300			
1592	71.59	1.069	21.1	1.85	6.54	-10.8	16.60	300			
1495	7163	1.058	20.7	1.82	6,53	-9.8	16.60	300			
111	51.07	1.070	50.1	1,04	0.77	(10	18.00	100			
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Well ID:	M	u 06	Sample ID:			Sample Time	1045] [
Casing dia	meter/type:	211			Well location					Weather:	80° Osercast
Screened	nterval(s):	2-3	9		Sampling pe	ersonnel: 4	16/09				
Total depti		35					low micropurge				-
	n to water (30-71		Water level		Heron				
Final depth	to water (v	v/o pump):	34.8	14	Water qualit	y meter:	YSI				
Measuring	point: Nor	th side of casin	g		Pump depth	setting:			Pump type/m	nodel:	
5 min	Δ < 10%	Δ < 10%			Δ < 0.1 pH		Δ < 0.3 ft	< 1L/min		< 0.5 L/min	Parameter Stabilization Limits (3 consecutive readings)
Time	Temp (°C)	Conductivity (mS/cm) or (µS/cm)	DO (%)	DO (mg/L)	рН	ORP (mV)	Water Level (feet btoc)	Flow Rate (L/min) or (mL/min)	Turbidity (NTU)	Purge Volume (L) or (mL)	Additional Comments
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	11/0/10

Well ID:	Mw	-07	Sample ID	:		Sample Time					
Casing dia	meter/type:	2"			Well location	n: 7,10	slop &	2- Lot		Weather: /	Couly 800
Screened i		7	0-35		Sampling pe	ersonnel:	16/19				7
Total depth		39					ow micropurge				
		w/o pump):	26.2	9	Water level		ltevan				
Final depth	to water (v	v/o pump):	26.	51	Water qualit	y meter:	YSI				
Measuring	point: Nor	th side of casin	g		Pump depth	setting:			Pump type/m	odel:	
5 min	Δ < 10%	Δ < 10%			Δ < 0.1 pH		Δ < 0.3 ft	< 1L/min		< 0.5 L/min	Parameter Stabilization Limits (3 consecutive readings)
Time	Temp (°C)	Conductivity (mS/cm) or (µS/cm)	DO (%)	DO (mg/L)	рН	ORP (mV)	Water Level (feet btoc)	Flow Rate (L/min) or (mL/min)	Turbidity (NTU)	Purge Volume (L) or (mL)	Additional Comments
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Jones Rd Ground Water Plume Superfund Site Harris County, Texas

Recorded By:_

Low-Flow Ground Water Sampling Data Sheet

Sheet	of
Date:	
	11/5/18

Well ID:	M	w-08	Sample ID			Sample Time	e:				
Casing dia	meter/type:				Well locatio	n:				Weather:	
Screened	interval(s):		1		Sampling p	ersonnel:					
Total depti	n:				Sampling m	ethod:					
Initial dept	h to water (w/o pump): /			Water level	indicator:		/			
Final depth	n to water (v	w/o pump);/			Water quali	ty meter:	YSI				
Measuring		th side of casin	ng		Pump depth	setting:			Pump type/m	odel:	
	Δ < 1° C	Δ < 3%	Δ <10%	Δ <10%	Δ < 0.1 pH	Δ < 10 mV	Δ < 0.3 ft	< 1L/min	Δ < 10 NTU		Parameter Stabilization Limits (3 consecutive readings)
Time	Temp (°C)	Conductivity (mS/cm) or (µS/cm)	DO (%)	DO (mg/L)	рН	ORP (mV)	Water Level (feet btoc)	Flow Rate (L/min) or (mL/min)	Turbidity (NTU)	Purge Volume (L) or (mL)	Additional Comments
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Date: _	
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Well ID:	Mw	1-09	Sample ID			Sample Time	1435					
Casing dia	meter/type:	2'			Well locati	on:	Ace	Lot		Weather:	Humid	800
Screened i	interval(s):	2	0-35		Sampling	personnel:	WE	109				
Total depth	ո:		35		Sampling i	method: Low-fl	ow micropurge					
Initial depti	n to water (v	v/o pump):	20.70		Water leve	el indicator:	Heron					
Final depth	n to water (w	v/o pump):	20.90		Water qua	lity meter:	YSI					
Measuring	point: Nort	h side of casi	ng		Pump dep	th setting:	28		Pump type/m	odel:	59 Mong	oon
5 min	Δ < 10%	Δ < 10%			Δ < 0.1 pH		Δ < 0.3 ft	< 1L/min		< 0.5 L/min	Parameter Stabili	zation Limits (3 consecutive readings)
Time	Temp (°C)	Conductivity (mS/cm) or (µS/cm)	DO (%)	DO (mg/L)	рН	ORP (mV)	Water Level (feet btoc)	Flow Rate (L/min) or (mL/min)	Turbidity (NTU)	Purge Volume (L) or (mL)	Ad	ditional Comments
1415	22.19	1.287	84.3	6.17	6.73	-59.8	21.30	350	/			
1418	22.09	1.283	11.7	0.99	6.62	-83.7	21.32	350	/,			
1421	12.37	1.285	5.7	0.49	6.51	- 86.5	21.00	200	/			
1424	22.47	1.261	4.3	0.37	6.47	-86.4	21.13	200	1			
1427	22.80	1.259	39	0.34	6.46	-86.4	21.00	200	/			
1430	13,57	1.235	3.4	0.29	6.45	-97.7	21.10	200				

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Well ID:	Mw	- 30	Sample ID:			Sample Time] [
Casing dia	meter/type:				Well locatio	n: P-	Lot.			Weather:	
Screened i	nterval(s):	20-	32.5		Sampling po		W610	9			
Total depth	1:	29.63			Sampling m	ethod: Low-flo	w micropurge				
Initial deptl	n to water (w/o pump):	24.83	we	Water level		Heron				
Final depth	to water (v	v/o pump):	22.98	24.95	Water quali	ty meter:	YSI				
Measuring	point: Nor	th side of casin	ng		Pump depth	n setting:	/		Pump type/m	nodel:	
5 min	Δ < 10%	Δ < 10%			Δ < 0.1 pH		Δ < 0.3 ft	< 1∐min		< 0.5 L/min	Parameter Stabilization Limits (3 consecutive readings)
Time	Temp (°C)	Conductivity (mS/cm) or (µS/cm)	DO (%)	DO (mg/L)	рН	ORP (mV)	Water Level (feet btoc)	Flow Rate (L/min) or (mL/min)	Turbidity (NTU)	Purge Volume (L) or (mL)	Additional Comments
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Well ID:	1	y-21	Sample ID:			Sample Tim	e: 0845				
Casing dia	meter/type:	2'			Well location	on:	Cartendi			Weather:	Cloudy 85°
Screened i	nterval(s):	3	0-30		Sampling p	personnel:	WEI	109			1
Total depth	1:	29	1.73		Sampling r	nethod: Low-f	flow micropurge				
Initial depth	n to water (v	v/o pump):	27.62		Water leve	l indicator:	Heron				
Final depth	Final depth to water (w/o pump): 2 3.80					lity meter:	YSI				
Measuring	point: Nort	th side of casi	ng		Pump dept	h setting:	25		Pump type/m	odel: Mo	n 500 1
5 min	Δ < 10%	Δ < 10%			Δ < 0.1 pH		Δ < 0.3 ft	< 1L/min		< 0.5 L/min	Parameter Stabilization Limits (3 consecutive readings)
Time	Temp (°C)	Conductivity (mS/cm) or (µS/cm)	DO (%)	DO (mg/L)	рН	ORP (mV)	Water Level (feet btoc)	Flow Rate (L/min) or (mL/min)	Turbidity (NTU)	Purge Volume (L) or (mL)	Additional Comments
0825	23.88	1.062	62.6	5.07	6.98	-9.3	23.95	220	41.0		
7828	24.01	1.064	15.8	1.30	6.75	-9.4	24.00	380	45.0		
0831	74.43	1.078	4.6	0.38	6.68	-14.7	23.80	200	63.3		
19834	24.88	1.099	3.6	0.29	6.67	-264	23.98	240	33.5		- X-
0837	24.76	1.107	2.5	0,20	6.65	-48.4	23.95	220	220W	7 21.6	
C) 840	247/	1.111	2.2	0.18	6.69	-92.6	2397	770		1 2	
COID	21.10	CIII	9.7.5	0.10	0.07	14.0	11.11	440			
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Well ID:	My	1-2a	Sample ID:			Sample Time	1000] [1	
Casing dia	meter/type:	2	11		Well location	n:	. 17 1-			Weather: (loudy 800	
Screened	interval(s):		48-93		Sampling personnel: 4/6/07							
Total depti	n:	9	59		Sampling me	ethod: Low-fl	ow micropurge					
Initial dept	h to water (w/o pump):	45.84		Water level	indicator:	Heron					
Final depth	to water (v	v/o pump):	46.24		Water qualit	y meter:	YSI					
Measuring	point: Nor	th side of casin	ng		Pump depth	setting:			Pump type/m	nodel:		
5 min	Δ < 10%	Δ < 10%			Δ < 0.1 pH		Δ < 0.3 ft	< 1L/min		< 0.5 L/min	Parameter Stabilization Limits (3 consecutive readings)	
Time	Temp (°C)	Conductivity (mS/cm) or (µS/cm)	DO (%)	DO (mg/L)	рН	ORP (mV)	Water Level (feet btoc)	Flow Rate (L/min) or (mL/min)	Turbidity (NTU)	Purge Volume (L) or (mL)	Additional Comments	
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Well ID:	Mw.	. 23	Sample ID:	Mw.	25	Sample Time	1240				
Casing dia	meter/type:				Well location	on: BFE	Club			Weather:	Cloudy 75°
Screened i	nterval(s):	4	8-93		Sampling p	personnel:	W6/	09			
Total depth	n:	55			Sampling r	method: Low-flo	ow micropurge				
Initial depth	n to water (v	w/o pump):	44.89		Water leve	el indicator:	teron				
Final depth	to water (v	v/o pump): 🕡	34.7	44.75	Water qua		YSI				
Measuring	point: Nor	th side of casir	ng		Pump dept	th setting:	50'		Pump type/m		1500 n
5 min	Δ < 10%	Δ < 10%			Δ < 0.1 pH		∆ < 0.3 ft	< 1L/min		< 0.5 L/min	Parameter Stabilization Limits (3 consecutive readings)
Time	Temp (°C)	Conductivity (mS/cm) or (µS/cm)	DO (%)	DO (mg/L)	рН	ORP (mV)	Water Level (feet btoc)	Flow Rate (L/min) or (mL/min)	Turbidity (NTU)	Purge Volume (L) or (mL)	Additional Comments
1210	23.85	0.795	41.1	3.32	6.65	-32,5	44.89	290	/,		Turbidity meters
1215	23.82	0.783	14.4	1.21	6.79	-35.5	46.23	250	/,		didn't come all
1218	24.18	0.791	12.5	1.03	6.82	-37.8	46.10	300	/		Vial
1221	24.72	0.804	10.6	0.88	6.86	-42.0	46.02	250			
1224	29.20	0.815	9.6	0.78	6.90	-47.5	45.70	300	/		
227	49.20	0.820	8,5	0.69	6.91	-48.5	45.87	300			
1230	24.80	0,817	8.3	0.69	6,91	-91.9	49,94	350	/		
233	24.81	0.817	7.8	17.64	6.91	-54.5		350	/		
.,,	1-21	0.017	7 - 0	0.01		707	1010	- 10			
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Well ID:	My	- 24	Sample ID:	Mw-	24	Sample Time	0910			[
Casing dia	meter/type:		-		Well location	on:	0.	rielly	tulo	Weather:	Scattered Clouds 80°
Screened i	nterval(s):		48-53		Sampling p	ersonnel:	W	5 104			
Total depth	1:	55			Sampling r	nethod: Low-fl	ow micropurge				
Initial depth	n to water (v	v/o pump):	17 93		Water leve	l indicator:	Heron				
Final depth	to water (w	v/o pump):	18.68		Water qua	lity meter:	YSI				
Measuring	point: Nort	th side of casir	ng		Pump dept	h setting:	51		Pump type/m	odel: 55 M	onsoan
5 min	Δ < 10%	Δ < 10%			∆ < 0.1 pH		Δ < 0.3 ft	< 1L/min		< 0.5 L/min	Parameter Stabilization Limits (3 consecutive readings)
Time	Temp (°C)	Conductivity (mS/cm) or (µS/cm)	DO (%)	DO (mg/L)	рН	ORP (mV)	Water Level (feet btoc)	Flow Rate (L/min) or (mL/min)	Turbidity (NTU)	Purge Volume (L) or (mL)	Additional Comments
0850	23.68	0.681	40.7	3.31	7.24	-65.4	19.19	300	10.39		
0853	23.98	0.695	12.8	1.06	7.13	-747	19.68	200	15.7		
2856	24.36	0.701	7.4	0.61	7.10	-81.9	20.69	300	10.63		
0859	24.90	0.704	6.1	0.50	7.09	-84.3	20.89	300	10.87		
0902	24.46	0.704	5.0	0.47	7.09	-88.6	20.84	200	9.88		
0905	24.63	0.706	4.6	0.38	7.09	-91.3	20.86	200	11.01		
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GROUND WATER LEVEL DATA

Station Number:	Recorded By:	Date:	Location:
Project Name: Joush GWPland	DT	04/19	Measuring Device: Heron
Project Number: 14342129	,		Developing Device:

WELL	TIME	CASING	CASING	WATER	PSH	WATER	TOTAL	AMOUNT	OBSERVATIONS/
NO.		SIZE	ELEVATION	DEPTH	DEPTH	ELEVATION	DEPTH	BAILED	COMMENTS
MW-25	10:10/19	2"		28.15	29:50	X	29.50		
MW-24	1053	2,"		16.39			54.56		
MN-23	1103	2"		45,31			54.49		
MN-07	1112	2"		27.45		1 00	35.20		
MN-2	1117	211		25,38			29.31		
MW-06	1138	211		32,27			35.16		Injectate
MW-22	1143	2"		48.19		-	54.60		
MW-20	+151	2"		26.50			24.50		
MW-05	1239	2"		16.80			35.50		
MW-04	1245	2"		13.10			33.15		
MWO	1255	2"		17.01			35.50		
MW-09	1320	7."		15.25			ñ		
MW-09	9	2.11		24.40			27.71		
MW-02	(333	2"		19.01			34.54		
MW-01	1350	2"		21.40			34.79		-stong injectule small

-covered in injaket

Well ID:	MW	-02 -03	Sample ID		en foode die de steel	Sample Time:	[15:25]			general property of the control of t	
Casing dia	meter/type:	2000			Well locat	ion: SHAW	IU00-P1	K & Jo.	res Pd.	Weather:	Day - 18° lt. Wills.
Scree ed	interval(s):		n day program, a construint galant province province and			personnel:		committee and the committee of the c			V
Total dept	h: 30	1.54	tagenment or year terror deletion the forest of		Sampling	method: Low-flo	w micropurge		and a second contraction of the second contr		
Initial dept	h to water (w/o pump): /	F19		Water leve	el indicator:					
Final deptl	to water (w/o pump): 🦪	20.70		Water qua			Plus	and the state of t		
Measuring	discussion contraressors	th side of casi	ng	- granner and a second a second and a second and a second and a second and a second a second and		th setting: 31	'broc	ye r an an manan bir astan permanan kanan kanan kanan	Pump type/m	The second contract to the second	The state of the s
5 min	Δ < 10%	Δ < 10%		Anna Anna Series Se	∆ < 0.1 pH		Δ < 0.3 ft	< 1L/min		< 0.5 L/min	Parameter Stabilization Limits (3 consecutive readings)
Time	Temp (°C)	Conductivity (mS/cm) or (µS/cm)	DO (%)	DO (mg/L)	рН	ORP (mV)	Water Level (feet bloc)	Flow Rate (L/min) or (mL/min)	Turbidity (NTU)	Purge Volume (L) or (mL)	Additional Comments
14:54											Pup on
14:56	24.6	0.62	2.3	0.17	624	-112.6	18.42.	400	2198m		- Black Prairitant (PPT) & Recheny Oder
14:59	245	0.62	0.5	0.06	6.08	-925	1903	330	1126		V
15:02	24.9	0.62	-0.1		600	-98,5	20.20	500	952	***************************************	D
15:05	25.1	0.63	-0.7		6.02	-100.4	20.75,	460	627AU	American Control Control	flow flutrohy (uncontrollably)
15:08	24.7	0.63	-0.7	Auditoria James Villanda	6.04	-99.2	24.70	275	-76 NoTU		ODD TURBEDIM RENOTING
15:11	25.3	0.66	-1.2		6.08	-98.J	21.90	300	-67 NM		10 NTU STO = 9.73 V
15:14	24.9	0.66	~Ø.9	Company Compan	6.09	-98.3	22-60)	2/4	-73 NTU	***************************************	
15:17	252	0.68	-1.2		6-11	-98.2	22.65	200	53.Ø	Company of the Control of the Contro	SAMPLE
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Sheet _____ of ___ Date: _____ APR__ 2016

Ground Water Sampling Data Sheet

Well ID:	MW-	-03	Sample ID			Sample Time:	16.50	Parameter de la constant de la const	Bedanconnection	финализм	
		2" PUC	namengs	alle V _a quantity and the stage that the	Well locati	on: Beho personnel: R	d Mc G & AP	Kong		Weather S	roung ~ 79°
Scree ed i	.7 ~		Michigan III and Andrewson III	- 1 - 1 - 2 × 1 - 2 × 1 - 2 × 1 × 1 × 1 × 1 × 1 × 1 × 1 × 1 × 1 ×			•		Market Company of the		
Total depth			2,00	er for the second second second second		method: Low-flo	Ninst		es a section de la constant de la co		
	to water (6:42			······			propogramma in the same of the		
	to water (v	wo pump): th side of casi	9	***************************************	Water qua Pump dep	7 .	ysi 3.0		Pump 'zpe/m	odel: 55	HUZZELAWE
5 min	Δ < 10%	Δ < 10%	***************************************		Δ < 0.1 pH	more desired of	Δ < 0.3 H	< 1L/min	Latinia Stanto	< 0.5 L/min	Parameter Stabilization Limits (3 consecutive readings)
Time	Temp (°C)	Conductivity (mS/cm) or (µS/cm)	DO (%)	DO (mg/L)	рН	ORP (mV)	Water Level (feet btoc)	Flow Rate (L/min) or (mL/min)	Turbidity	Purge Volume (L) or (mL)	Additional Comments
16:37					Pun	rp	00	The second secon			AU OTW include 7" rise
16:37	22.8	0.96	56.1	4.61	698	80.2	16.38	175	1377144		(temp installed due to hoter)
16:4	21.2	11.95	44.6	3.89	6268	85.0	16.55	454	2194 AU	-	
16:45	22.3	0.95	44.8	3.89	6.66	88.3	16.52	456	723	is attended or the	
16:48	22.7	0.94	44.1	3.82	6.65	92.1	16.52	450	6200	,	
-				12 - 0 - 0 - 1					And the second s	And the second s	SAMPLE.
			adalahan berbuh yang yang papengan melantun.						AND THE PARTY OF T		
		-				- 1. TO 1887 IN CONTROL AND ADDRESS OF THE PARTY OF THE P					
			indifferent of the first of progression is good gapping proving a second								
) ANA-MATTER CONTRACTOR OF THE RESIDENCE OF THE PARTY OF								
			A PARTICULAR DE CONTRACTOR DE								
									and the second s		A CONTRACTOR OF THE CONTRACTOR
			A CONTRACTOR OF THE CONTRACTOR								
			tanto a managar parameter anno a managar								
			***************************************		area area						
			and a description of the same								
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Sheet	of	1
Date:	04/2	116_

Well ID:	MWO	L.L	Sample ID			Sample Time:	<u> </u>						
		2" FUC	yr Mantalannian w 4 was 1 w 1 mantalanahanna w w	of coll account name wereholders	Well locati	on: Behand	Mekons)		Weather: H_{ℓ}	smid, Overast/Rais		
Scree ed	interval(s):	<u> 20-35 '</u>	conseques the source will be served to				+ AB						
Total deptl	n: <u>33,</u>				Sampling r	method: Low-flo	w micropurge		o Managara a company				
Initial dept	n to water (v	wlo pump): 10	1.65		Water leve	el indicator: 🥖	15/07		The second second				
Final depth	i to water (v	v/o pump): [3	46		Water qua	lity meter:	YSI Pro	Plus	TARREST CONTRACTOR CON				
Measuri ng	point: Nort	th side of casi	ng	-g-antonialsomousanssamean	Pump dept	th setting: 30	> ^		Pump pelmodel: Mayson 55				
5 min	Δ < 10%	Δ < 10%	1-021-022-03-03-03-03-03-03-03-03-03-03-03-03-03-		$\Delta < 0.1 \text{ pH}$		Δ < 0.3 ft	< 1L/min	udangan sanakara a	< 0.5 L/min	Parameter Stabilization Limits (3 consecutivé readings)		
Time	Temp (°C) (Conductivity (mS/cm) or (pS/cm)	DO (%)	DO (mg/L)	рН	ORP (mV)	Water Level (feet bloc)	Flow Rate (L/min) or (mUmin)>	Turbidity (NTU)	Purge Volume (L) or (mL)	Additional Comments		
0828	20.4	0.98	2.2	0.19	7.63	-0.7	13.31	300	50.7		- /		
0831	20.5	6.98	0.5	0.03	6.65	-30.a	14.01	300	gipinan	- 5/es	of drew drew		
0835	20.5	0.98	0.3	0.02	Calda	-37,9	14.53	<i>7</i> 00	52.1				
	20.5	0.98	0.2	0.00	6.67	40.4	15,21	400	52.0		- I was an		
0441	80.6	0.98	-0.4	0.00	6.69	-42.0	15.38		6. fine 2				
2.D.L.	<i>V</i>	0.70		0.00	8 × 96 1		1-3-5-2						
									agadenia orang sang sang sang sang sang sang sang s				
									a presentation and the Hilliam and				
			THE STATE OF				***************************************		and the second s				
			edijas a pada yayani da amba di kapinjida ahariki kamba s										
			MAY A TABLE VARIABLE NAMED TO BE SERVICED TO 1						and an annual contract of the second of the	7			
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					-(+)	-/-	1-11	-VU	2/00	1.			
							<i>y</i>		y'		X		
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		***************************************				,					4		

			enter and a contract of the co						***************************************				
			radio francesis desafondos contribuidos de Mandresco						unternamental				
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Sheet	of
Date:	04/21/14

Well ID:	MM	S S	Sample ID		Подаварина выправления «« но да Расправления постоя по почения пред	Sample Time:	1053	ĺ ,		Downward	
	meter/type:		And the same of th	1 1 And an annual designment of the second	Well locati	on: Berry	Lagger	center		Weather: R	in Dueron
		25.50.	35.50		Sampling	personnel: 🕡	WAB	· · · · · · · · · · · · · · · · · · ·	uidi. Lan ann an		
Total depth	1:	<i>35,9</i> 0		**************************************	Sampling	method: Low-flo	w micropurge		managaga ayan a sa s		
nitial depth	n to water (v		<u>(e.32</u>		Water leve	el indicator:	Huron	711	makerong gayang kalan		
	to water (v		6.60		Water qua			1165		4.8	
exportation contail was assumed as	and the same of th	th side of casi	ng I	T	Pump dep	an manyang pang ang ang ang ang ang ang ang ang ang	gatamentonian-enteriori	proceedestination (III beginning representation)	Pump : /pe/m	odel: Monso	
5 min	Δ < 10%	Δ < 10%	Annual Statement of Statement o		Δ < 0.1 pH	**************************************	Δ < 0.3 ft	< 1L/mjn		< 0.5 L/min	Parameter Stabilization Limits (3 consecutive readings)
Time	Temp (°C)	(mS/cm) or (µS/cm)	DO (%)	DO (mg/L)	рН	ORP (mV)	Water Level -(feet btoc)	Flow Rate (L/min) or /mL/min)	Turbidity (NTU)	Purge Volume (L) or (mL)	Additional C omments
9 33	22.1	0.392	44.9	3.87	7.35	146.6	110608	350	653N		- hereto fer bed
9936	22.1	0.383	34.6	3.03	7.69	143.6	16.97	500	78710		- Sloht drew down
0539	22.1	0.375	32.2	2.79	210	143.2	16.98	400	45		
0942 1945	222	0.373	30. <i>3</i>	201	7.11	143 2	16.77	200	41		
ghad a dame			*** 5,36	render	1 - A	PAIN)		AND THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF	manufoldings company or a control of the control	THE PERSON NAMED IN COLUMN TWO IS NOT THE PERSON NAMED IN COLUMN TWO IS NAMED IN THE PERSON NAMED IN T	
1044	21.8	0.366	26.6	2.37	244	1771	1ce. 38	400	105		
1447	21.7	0.368	28.6	2.49	7.33	1717	16.75	150	93.8		
1050	21.8	6.369		2.53	7.23	1019	16.89	350	69.3		
1053	22.1	0.374	27.1	2-35	77/0	168.4	14.90	200	521.3		
St. dee	W . E . E . E	9.1/9.	504 14 1		1.33	140.	1,4010				
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						75					
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						1,1510		,			
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Date:	64/21	/K_

Well ID:	MW-C		Sample ID			Sample Time:	1430				
Casing dia	meter/type:	2"PK				on: SW 52		The state of the s	Electric De la 1990	Weather C/	loudy/Rain
Scree ed i	interval(s):	20-35	and the second second second second		Sampling p	personnel: 07	<u> 1/15</u>	- construent and cons			
Total depth	1: 35.	<u> </u>	71		Sampling i	nethod: Low-flo	f		grammy party of county call	oor and reasons, positional ration with the second state and consideration and	
Initial depti	n to water (v	w/o pump):	<u>G. 71</u>		Water leve	el indicator: H	<u> 45/20/1</u>	n_1	- 1909/04/49		
Final depth	to water (v	v/o pump):2	1.80		Water qua		YSI Pia	Plus			All of the second secon
Measuring		th side of casi	ng		9	th setting: 34	gazaanin mana	re-condenses rosporazyajanjeszenémbel k	Pump 'vpe/m	***************************************	500 D"
5 min	Δ < 10%	Δ < 10%			Δ < 0.1 pH	ONOCHPHIZERROUSERBENNES ON GOVERNMENT CHESTRACER	∆ < 0.3 ft	< II./min	AND THE PROPERTY OF THE PARTY O	< 0.5 L/min	Parameter Stabilization Limits (3 consecutive readings)
Time	Temp (°C)	Conductivity (mS/cm)	DO (%)	DO (mg/L)	рН	ORP (mV)	Water Level (feet btoc)	Flow Rate (L/min) or (mL/mip)	Turbidity (NTIJ)	Purge Volume (L) or (mL)	Additional C omments
1417	23.6	0.57	24.3	1.89	G.12	12.9	27.49	200	G15BU		- lots of injectate in
1466	24.3	0.58	10.7	0.89	9.10	2.2	27.80	300	35000		- lots of injectate in
1423	25.1	6.53	6.2	0.51	6.10	~2. l	28.10	050	40-328-	139	-Strong odor
1426	25.2	0.58	6.2 5.1		6.10		28.42	\$50	111	- Commercial Commercial and Association (Commercial Association)	-very firsted grave.
1429	25.4	0.58	4./	0.33	6.11	-0.4	28.82	400	111 189		-very firstel, gray, 10.38 - Turbulis Myle
3 /00 1		0 00			0				701		Elevelach sum best
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			OUTOUR TOTT ON THE A VIOLENCE OF THE BETTER THE THE AND A SECOND CO.								\$
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Date:	04/19/10

Well ID:	MN-c	5	Sample ID			Sample Time:	1500			Becommon	
Casing dian	neter/type:	2'PUL		······································	Well locati	on: Wood	lot	and the second s	geographic oper distriction	Weather: C	Proposet humed,
Scree red in		10-35	construction of the superior and the superior of		Sampling p	personnel: 07	Y AB		Marketon and the control of the cont		
Total depth.			-		Sampling i	method: Low-flo	w micropurge		AND THE PERSON OF THE PERSON O	and the second s	
nitial depth	to water (v	v/o pump): 15	25		Water leve	el indicator: He	erioa	and the second s			
Final depth			5.30		Water qua	lity meter:	YSI KR	, Plus			
Measuring p	ooint: Nort	th side of casi	ng	-g	Pump dep	th setting: Se	2	province construction and the second	Pump pe/m	odel: Mans	ioon 542"
5 min	Δ < 10%	∆ < 10%	***************************************		Δ < 0.1 pH	omodykają je projekty kontrolika pokonika pod pokonika pod pokonika pod pokonika pod pokonika pod pokonika pod	Δ < 0.3 ft	< 1L/min		< 0.5 L/min	Parameter Stabilization Limits (3 consecutive readings)
Time	Temp (°C)	Conductivity (mS/cm) or (µS/cm)	DO (%)	DO (mg/L)	рН	ORP (mV)	Water Level (feet bloc)	Flow Rate (L/min) or (mL/min)	Turbidity (NTU)	Purge Volume (L) or (mL)	Additional Comments
1444	24,3	15.79	10.6	0.84	6.91	1309	15.30	400	716AU		-under fixed ducke
1447	23.8	0.78	1.8	0.15	6.71	31.5	15.39	300	948		surface completion duis
1450	23. G	0.78	1.0	0.08	10,69	16.1	15.30	200	655		surface completion duis destroyed. Well , 5 under 13" wood deds 5, no pad
1453	25.2	0.0	0.4	0.03	6.20	12.7	15.35		(20)		13" wood dellis ind one
1456	2/0	0.78	001	0.01		6.2	15.41	300	4.0		
					271	75.00					
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Date:	04/21/	16

Well ID:	MU-	09	Sample ID		and the second state of the second se	Sample Time	1305					
Casing dia	meter/type:	2" PUC	and the same of th	of a common of the field of the common of th		ion: Are l		avea	geografied of Copy	Weather <i>O</i>	vercust/wet	
		20'-4		Sampling personnel: DT+ AB								
Total depti	n: 37.	.7/			Sampling method: Low-flow micropurge							
Initial dept	h to water (v	w/o pump): 20	4.40		Water leve	el indicator:	Turion	. 1				
	n to water (v	.^~	4,41		Water qua		YSI Pro	Plus	Approximately (ACM) grants - 1470° grants (ACM)			
Measuring	point: Nort	th side of casi	ng	The second secon	Pump dep		4.0'		Pump */pe/m	nodel: Man	15001	
5 min	Δ < 10%	Δ < 10%		- COOLSON CONTROL OF C	Δ < 0.1 pH	parties and a contract of the	Δ < 0.3 fl	< 1L/min		< 0.5 L/min	Parameter Stubilization Limits (3 consecutive readings)	
Time	Temp (°C)	Conductivity (mS/cm)	DO (%)	DO (mg/L)	рН	ORP (mV)	Water Level (feet bloc)	Flow Rate (L/min) or	Turbudity (NTU)	Purge Volume (L) or (mL)	Additional Comments	
1248	21.9	0.74	23.8	2.07	7.03	190.1	24.20	-010	1/0			
125D	223	0.75	22.0	1.86	6.72	193.7	24.10	150	110			
1253	22.7	1.75	19.9	1.69	6.70	191.9	24.20	300	21			
1256	232	0.75	23.2	1.53	6.70	193.5	24.30	500	21			
1259	23. O	0.74	18.3	1.53	6.70	196.7	25.00	500	68.7			
1CX	030.0	<u> </u>	10.0	1. 5.	Q. 70	/ i Q · /	(x):00		90.7			
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						reasonable fil the first our gas gas gas gas gas and desirable special agreement of					4	
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						political de la companya para a que de la companya						
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								no and was affiliated a field and parameters of the second	parameter at the control of the cont			



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Date:	77 74 	di.		Lors

Well ID: MIN-20			Sample ID		and the same property control are productive and the same same same same same same same sam	Sample Time:	V400						
Casing dia	meter/type:	2" Pu			Well locati	on: Lypnes							
Scree ed i			white the contract of the cont		Sampling p	personnel: ((a/AB		MARKET TOWNS 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1.				
Total depth	<u>: 2</u>	9.5				method: Low-flo		S.	andadi-Tiringa	a and a security or a great part and a security of the securit			
Initial depti	n to water (v	wlo pump): 2	<u>5.35</u>		Water leve	el indicator: 🏂			annestrici - Augus				
Final depth	i to water (v	vlo pump):	254)	. 107)	Water qua		YSI - Pro 1		and the second s	an annual service and a service and the Petropour emission in the Petropour			
Measuring	point: Nort	th side of casi	ng	grand-segman controller with superiors	Pump dep	th setting: 24	5 28	0	Pump :/pe/m	odel: Mon	Soin (Stainless Stal)		
5 min	Δ < 10%	Δ < 10%			Δ < 0.1 pH	ender til stationer fra stationer st	Δ < 0.3 ft	< 1L/min		< 0.5 L/min	Parameter Stabilization Limits (3 consecutive readings)		
Time	Temp (°C)	Conductivity (mS/cm)-br (µS/cm)	DO (%)	DO (mg/L)	рН	ORP (mV)	Water Level (feet btoc)	Flow Rate (L/min) or (mL/min)	Turbidity (NTU)	Purge Volume (L) or (mL)	Additional Comments		
13:30											Pup on		
13:32	26.9	1.13	3-5	0.21	6.44	145.9	25.78	200.	2629	- page-reconstruction of the second			
13:55	27.1	1.12	2.7	0.21	6.33	114.5	16552	5.88 300	1635	to excepted here reported by the envelope	4		
13:38	27.6	1.13	1.1	1.08	6.29	87.1	10052	350	132	- Igal.	flow fluctouting		
13:41	778	1.13	0.0	0.00	629	58.2		450	122	- Marketin San - Alan -			
13:44	2.1.5	1.12	-0.2	-	6.31	40.8	1 . i		77.6	Land the Report of the Con-	Llow Livetoating Ley parameters stabilized		
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	years and a second		ų	genternous executivos constructivos	Section Section Section Control Section Sectio	,	Senior in the contract contrac	1	generalization	9		an
Well ID:	Muz	<u> </u>	Sample ID			Sample Time:						mi
Casing dia	imeter/type:	2"Puc			Well locati		ws Store	. Front		Weather: 50	nay 76°F	
Screr ed	interval(s):	25-30) \	. 102 102	Sampling p	personnel: AB	+16	TO THE OWNER OF THE PERSON NAMED AND THE PERSON NAM	Management of the contraction of	****		
Total dept	h: 30°				Sampling r	method: Low-flo	w micropurge		automatan met-	. ann ann ann an ann an ann an ann an ann an a		
Initial dept	h to water (\	w/o pump): 2	4.42	www.commonormanners.com	Water leve	el indicator: 14	erroin		analogue konnonnon or o o o o o o o o o o o o o o	·		
	n to water (v		4.46		Water qua		ysı Po	Plus	marked Market State (1907)			
Measuring	point: Nor	th side of casi	ng	-personatesonominatosinato	Pump dep	th setting: 28			Pump :/pe/m	odet: Mons	001 55 2"	m
5 min	Δ < 10%	Δ < 10%			∆ < 0.1 pH		∆ < 0.3 ft	< 1L/min		< 0,5 L/min	Parameter Stabilization Limits (3 consecutive readings)	A.
Time	Temp (°C)	Conductivity (mS/cm) or (µS/cm)	DO (%)	DO (mg/L)	pН	ORP (mV)	Water Level (feet btoc)	Flow Rate (L/min) or (mL/min)	Turbidity (NTU)	Purge Volume (L) or (mL)	Additional Comments	
10:19											Kuys on	
10:25	25	1.00	2.1	0.17	6.74	194	24.90	500	63.4	+525030072204275940,		_
10:28	25.1	0.99	1.4	011	658	194.6	28.92	5,60	51.0° + 25.7°,			
10:31	25.5	0.99	Ø.3	0.02	6,56	196.8	24.92 24.89	400	25.7	***************************************		-
10:34	25.6	1.00	Oil	0.01	6.53	195.7	24.92	400	15.3%	SOUTH COMMENT OF THE PROPERTY		
0:37	25.5	0.99	-0,3	12000	6.55	193.0	24.97	450	9.87			
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			A MART WIRE FOR SAME NA SAMPA BARA NA MANAGAMANA ANA ANA			and defined the first thread a construction of the state			- CONTRACTOR CONTRACTO			1
			***************************************									-
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						Tanak (Tanah San Andrews						1
			- A subbifused, weathering the manifestant decrease from the									
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Date:	04/2	1/16

Well ID:	MW-	22	Sample II)			Sample Time:	1535		ENTERLY DESCRIPTION OF THE PROPERTY OF THE PRO		
Casing dia	meter/type:	2" PC	A	TO THE PERSON NAMED AND ADDRESS OF THE PERSON NAMED AND ADDRES		ion: SW Cos			WENTERSON OF STREET	Weather: Cl	loody/Rain
Scree ed		50-55	toole below the sign of the control of the sign of the		Sampling personnel: PT + AB						
Total depti	h: 55°		hogenoods a management was	· · · · · · · · · · · · · · · · · · ·	Sampling	method: Low-flo	w micropurge			nacon conoci con esta e en esta e en esta en e	
Initial dept	h to water (v	w/o pump): 4	1.75		Water leve	el indicator: 🖁	ecton				Account to the contract of the
Final depti	n to water (v	v/o pump): 🎸	2 <i>/</i> 2	III 1981 P.	Water qua	ility meter:	YSI ROP	U5	monantesionarios to Let 1 the 1 think of the		and the second s
Measuring	point: Nor	th side of casir	ng		Pump dep	th setting: 52		Province and a special	Pump 'zpe/m	odel: // 64 50	084 75
5 min	Δ < 10%	Δ < 10%	Min his tota sunt 116 a Ministrativi Ministrativi ne		Δ < 0.1 pH		∆ < 0.3 ft	< 1L/min		< 0.5 L/min	Parameter Stabilization Emits (3 consecutive readings)
Time	Temp (°C)	Conductivity (nS/cm) (µS/cm)	DO (%)	DO (mg/L)	рН	ORP (mV)	Water Level (feet btoc)	Flow Rate (L/min) or Lant/min)	Turbidity (NTU)	Purge Volume (L) or (mL)	Additional Comments
1522	2/2	1.23	12.0	0.97	6.36	-37.8	47.21	400	210 A		- nator tribul
525	217	1.22	2.5	0.19	4.30	-38.9	48.29	000	1874M		- ughor fribulg - strong inject blog
15023	25-1	1.21	1.0		6.26	-34.8	48.28		- 6,46		7
1531	25.7	1.19	0.4	0.03	6.21	-2/.0	48.52	Ce82	Over		
1534	25.9	1. 18	Δ/		6.21	-14.7	48.46	200	158.0		
100					00.7		70 .4	. 66.		, ay and an	

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Sheet _____ of ____ Date: <u>04/29/16</u>____

Well ID: MW-23 Sample I			Sample ID			Sample Time:	1420	Branch				
Casing dia	meter/type:	2"PUL	<u></u>		Well location: BFE 107 Weather: Rain / clouds							
		150-54.49	L		Sampling personnel: 0T ← 5B							
Total depti	n: 54.		1- 0	***************************************	Sampling method: Low-flow micropurge							
Initial depti	h to water (\				Water level indicator: Herron							
Final depth	n to water (v	v/o pump): (5.54		Water qua		YSI PIO	<u> </u>	PP companies acceptable 1997 (companies)			
Measuring	Lanescon-money and	th side of casi	ng	Y		th setting: 56		an annual or service the service of	Pump 'zpe/m	odel: <i>Mons</i>		
5 min	Δ < 10%	Δ < 10%	Kali Pyrasini kacamana ang ang ang ang ang ang ang ang ang	***************************************	Δ < 0.1 pH		Δ < 0.3 ft	< 1(/min		< 0.5 L/min	Parameter Stabilization Limits (3 consecutive readings)	
Time	Temp (°C)	Conductivity (mS/cm) or (µS/cm)	DO (%)	DO (mg/L)	рН	ORP (mV)	Water Level (feet btoc)	Flow Rate (L/min) or (mL/min)	Turbidity (NTU)	Purge Volume (L) or (mL)	Additional Comments	
1405	24.6	0.61	24.5	1.83	201	116.0	46.35	125	OR		- newler Seobal	
1408	24.7	0.6/	G.7	0.55	6.94	169.0	46.62	325	OR		-cloudy orange -likely injurion related -slight ianual odos	
1411	25.2	0.62	46	0.38	6.93	159.9	41,99	250	OR		- like he in cution released	
1413	25.6	0.63	4.5	0.37	6.23	152.3	47.38	325	OR		a chalit cancel alas	
	25.6	0.63	47	0.38	6.93	144.0	47.38		OR		3/154/ /0/1000: 0000	
	80.4	0.00		0.00	0.10	11110	17.50	20	0'			
			a pagambahan Parla PPR 178 Pagangu dan madapa at			and the second section of the second						
			polyministración d'alabatica (1900 Millioning graphistración de la colonia de la colon									
			nt plantanes a si di salat a liiggi consposa a l				_/_	<i>\</i>	11			
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Well ID	MN	-24	Sample ID			Sample Time:	1205				
Casing dia	ameter/type:	2" P	W		Well locati	on: O'Reil	4 6+			Weather:	Pain, 76°F
		30-35		1 1 2	Sampling	personnel: P	FY AB				
Total dept	h: 53°.	<u>۵</u>			Sampling i	method: Low-flo	w micropurge				
Initial dept	h to water (w/o pump): 6	.41		Water leve	el indicator: 🎢	teros				
Final dept	h to water (v	w/o pump): 🎣), <u>}</u> { <u>6</u>		Water quality meter: YSI Po Plus						
promotes	The same of the sa	rth side of casi	ng	y	Pump dep	th setting: 🛴	2	prov	Pump type/m	odel: Ma	19001 2"55
5 min	Δ < 10%	Δ < 10%			$\Delta < 0.1 \mathrm{pH}$		Δ < 0.3 ft	< 1L/min	Partingues and the same and	< 0.5 L/min	Parameter Stabilization Fimits (3 consecutive readings)
Time	Temp (°C)	Conductivity (mS/cm) or (µS/cm)	DO (%)	DO (mg/L)	pН	ORP (mV)	Water Level (feet bloc)	Flow Rate (L/min) or (mL/min)	Turbidity > (NTU)	Purge Volume (L) or (mL)	Additional Comments
423.7	23.7	6.257	29.2	2.4	945	142.2	16.95	150	16223		9.93 Col on turbulal
1152	24.4	0.51	4.4	3.9	7.51	1578	17.46	X00°	13/		- the let of second and
1155	24.4	0.53	2.9	2.9	7.11	152.4	18.19	180	DS.		- Slow returne, slight
1158	23.8	0.53	2.4	0.21	7.06e	146.8	18.48	350	11		drue down
1201	24.4	0.54	2.5	02/	7.04	145.3	19. Lele	200	92.8		
1204	24.3	0.54	2.5	020	7.04	137.9	20.23	200	75,4		•
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		T	aran dia mpatria aranga di taman di di taman ya mananga maran mana i				, s	/	Production Address No. 1997-1997 Constitution and Address		
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Recorded By:	 ***************************************

GROUND WATER LEVEL DATA

Station Num	ber:		I	Recorded By	* *	Da	ite:	Location:		
Project Name	e: <u>Ja</u>	us Rd	and the second s	Or		щ)	3/15_	Measuring Devi	ce:	
Project Num	ber:	•	·				Developing Device:			
					Screen	Bollon				
WELL	TIME	CASING	CASING	WATER	PSH	WATER	TOTAL	AMOUNT	OBSERVATIONS/	
NO.		SIZE	ELEVATION	DEPTH	DEPTH	ELEVATION	DEPTH	BAILED	COMMENTS	
MWD	1102	2.,		25.16	35					
MUCR		2"	, ,	23.21	35					
MW03		2'		22.21	35	-40	doust h	refe-villel	are pics	
MW-04		2*		21.39	35					
MW-05		2"	Annual Control of the	21.39	35					
MW-Qo		2"		34.00	35					
MW-07	:	\mathcal{J}'		28.68	35					
mw-of		2"		20.14	-35,5 dr	ven over-like	G ful of	run water		
MW-O	1	2"		27.28	35		(
MW-10		4"		143.72	290					
MN-11R		4"		143.38	269	-				
MWB		Land U		141.07	280		-{			
1111-13		4		141.94	294				,	
NW 14		Land !!		138.4	280					
MW-15		i. 11		140,18	राधि					

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GROUND WATER LEVEL DATA

Station Number:	Recorded By:	Date:	Location:
Project Name:			Measuring Device:
•			
Project Number:		BALLET GALLET SPANISH (AND SPANISH SPA	Developing Device:

Screen, Golfon

WELL TIME CASING CASING WATER PSH WATER TOTAL AMOUNT OBSERVATIONS/										
TIME	CASING	CASING	WATER	PSH	WATER	TOTAL	AMOUNT	OBSERVATIONS/		
	SIZE	ELEVATION	DEPTH	DEPTH	ELEVATION	DEPTH	BAILED	COMMENTS		
			140.97	278	Al A					
			223.21	410						
	4",		144.18	284						
	4"			240						
	<u> </u>		27.92	30						
	7		27.61	30						
	2"			53						
	2"		46.67	53						
			20.37	53						
			29.41	28		30-0 4	well new	ly dry		
	α		109.64	122	-					
	8		110.33	128						
	\mathcal{A}		108.85	122						
	2"		109.84	IJJ						
	2"		109.58							
	TIME	SIZE 4" 4" 2" 2" 2" 2" 2" 2" 2"	SIZE ELEVATION 4" 4" 4" 2" 2" 2" 2" 2" 2" 2"	SIZE ELEVATION DEPTH 4" 140.97 4" 123.21 4" 144.18 27.92 27.93 27.	SIZE ELEVATION DEPTH DEPTH 4" 140.97 278 4" 123.21 410 4" 144.18 240 2" 27.92 30 2" 27.92 30 2" 29.52 53 2" 49.52 53 2" 49.52 53 2" 49.52 53 2" 109.64 122 109.84 122 109.84 122	SIZE ELEVATION DEPTH DEPTH ELEVATION 4" 140.97 278 4" 123.21 410 4" 144.18 240 27.92 30 2" 27.91 30 3" 49.52 53 2" 40.67 53 2" 107.64 122 109.84 122	SIZE ELEVATION DEPTH DEPTH ELEVATION DEPTH 4" 140.97 278 4" 23.21 410 4" 144.18 284 4" 27.92 30 2" 27.91 30 3" 49.52 53 2" 49.52 53 2" 20.37 53 2" 20.38 20.38 2" 20.38 20.38 2" 20.38 20.38 2" 20.38 20.38 2" 20.38 20.38 2" 20.38 20.38 2" 20.38 20.38 2" 20.38 20.38 2" 20.38 20.38 2" 20.38 20.38 2" 20.38 20.38 2" 20.38 20.38 2" 20.38 20.38 2" 20.38 20.38 2" 20.38 20.38 2" 20.38 20.38 2" 20.38 2" 20.38 20.38 2" 20.38 2	SIZE ELEVATION DEPTH DEPTH ELEVATION DEPTH BAILED		

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ate:	-	2	6	4	E		
		7	100	7:			

Well ID:	MW-01		Sample ID:			Sample Time								
Casing diam	neter/type:	2" PUL			Well locat	ion: Store Fio		1 Mark	et	Weather: 5	my 45°F			
Screened in	terval(s): 🍃	<u> </u>		CONTRACTOR OF THE PROPERTY OF	Sampling	personnel: Da	any, T, D.	cha B						
Total depth:	35				Sampling	method: low	How me	CIO PURC		eri prilimuo di discono construccioni di di di discono gine e si di si di di				
Initial depth	to water (w/o	pump): 25	7.03		Water leve	el indicator: He	ron	/ /		~~~				
Final depth	to water (w/o p	oump): 25	<u>. 33 </u>		Water qua	Vater quality meter: VST 170								
Measuring p	oint: North s	ide of casing	······································		Pump dep	Pump depth setting: 3 6 Pump type/model: Marson Pro								
<u> </u>		erjärintrottinasiasiasiasiasiasiasiasiasiasiasiasiasia	· · · · · · · · · · · · · · · · · · ·	T	<u> </u>				<u> </u>	1				
Time	Temp (°C)	Conductiv (mS/cm) or (µS/cm)	%DO	DO (mg/L)	рН	ORP (mV)	Water Level (feet btoc)	Flow Rate (L/min) or (mL/min)	Turbidity (NTU)	Purge Volume (L) or (mL)	Additional Comments			
0739	22,2	862	20.1	1.57	6.99	94.1	25,41	225	///					
0742	23,9	895	12,4	1,03	6,65	73.2	25.54	300	149					
15745	25.2	926	7.6	0.80	6.60	53.7	25.64	300	14					
1048	25,5	931	8.2	0.67	6.60	41.0	25.71	350	82.5		-stout draw down			
1051	25.0	734	7.4	0.60	6-60	21:60	25.81	350	58.9					
	(1906) - Andrew Grand Control (1906) - Andrew Grand Grand	elikinist 1900 gazagan, manusi kirindi il 1900 Pagagani mak		######################################		AND THE PROPERTY OF THE PROPER								
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Well ID:	MW-	62	Sample ID			Sample Time	: 0935							
Casing diar	neter/type: _	2"PUC			Well locati	ion: NW C	Coines Sh	opin Ci	W 6)	Weather:	Sunny, 60°F	***************************************		
Screened in	nterval(s): 😞).5 -33		name di li Maria de la compania del compania del compania de la compania del la compania de la compania del la compania de la	Sampling	ىن personnel: D	ene Thon	or, Joh	n Bon	<u>ier</u>				
Total depth	<u> 3</u> 9				Sampling	method: /our	Flow m	ucro pur	52					
Initial depth	to water (w/o	pump): 23	.10		Water leve		101	1						
Final depth	to water (w/o	pump): 3	150		Water qua	ility meter: 📈	SI Pro	2						
Measuring	point: North s	ide of casing	ėvaninė erektininė autoriai daraktininė autoriai daraktininė autoriai daraktininė autoriai daraktininė autoria		Pump dep	mp depth setting: 3D Pump type/model: No.1800n P10								
Time	Temp (°C)	Conductiv (mS/em) or (µS/cm)	[}] %DO	DO (mg/L)	рН	ORP (mV)	Water Level	Flow Rate (L/min) or (mL/min)	Turbidity (NTU)	Purge Volume (L) or (mL)	Additional Comments			
6914	22,3	817	31.3	2.68	6.73	148.7	24,30	225	463					
0917	22,4	247	24.8	0,31	(0,2)	125.6	35/.35	250	464					
0920	23.5	866	27.6	2.33	6.2	110,7	24.56	250	415					
0923	23,8	875	33.0	2.82	6.22	98.0	24,72	325	229					
0926	24.0	RPO	34.1	2.38	Co.24	90.3	24.83	275	144					
0929	23.7	878	31,5	2.43		53.7	24.82	250	104					
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Well ID:	MW-C	5	Sample ID:			Sample Time	1050				
Casing dian	neter/type: //	R"PVC	_		Well locat	ion: Baind VI	Mekons K	est.		Weather: 5	uny 60°F
Screened in	iterval(s): 🍝	2,5-35		materia.	Sampling	personnel: Dec	ene T	Sehn P	2		
Total depth:	35				Sampling	manifestation of the second	flow m	1610001	3C		
Initial depth	to water (w/o	pump): 📿	<u> </u>		Water leve	el indicator: //	00/				
Final depth	to water (w/o p	pump): 🚕	<u>1,23</u>		Water qua	ality meter: 1/5	I, 100	والمتعادية والمتعادية والمتعادية	i i i i i i i i i i i i i i i i i i i		
Measuring point: North side of casing Pump depth setting: 30' Pump type/model: Marsan 110							rear tio				
Time	Temp (°C)	Conductiv (mS/cm) or (µS/cm)	%DO	DO (mg/L)	рН	ORP (mV)	Water Level	Flow Rate (L/min) or (mL/min)	Turbidity (NTU)	Purge Volume (L) or (mL)	Additional Comments
1033	20.2	878	24.3	2.14	6,56	140.3	22,50	300	308		
1036	20.3	902	18.7	1.000	6.59	1237	2256	250	286		
1039	21.8	925	16.1	141	6.62	110.Ce	22.60		195		
1042	21.8	966	13,3	1.16	Co.Ceo	99.4	22.60	400	97.9		
1045	21.1	1003	11.8	1,04	10.600	91.2	22.48	250	52.5		
1048	212	1014	11.2		6.60	84.2	22.48	250	499		
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Date: 🔟	27م	2 I	5

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Well ID:	MW-		Sample ID:			Sample Time:	B55			Brookwag	
Casing dian	neter/type:	2"PK			Well locat	tion: Behind	Centera	IN G	celine	Weather:	wfly sunny 65-05
Screened in	nterval(s):				Sampling		ine T. Ja	ha B			
Total depth:	35′				Sampling	method: Low	flow m	LICIONAE			
Initial depth	to water (w/o	pump): 21	.63		Water lev	el indicator: He	sion		44.61		
Final depth	to water (w/o p	pump):		and the state of t	Water qua	ality meter: 💥	I PRO				
Measuring p	oint: North s	ide of casing		**************************************	Pump dep	oth setting: 🥳	<u>W. 27 '</u>		Pump type/m	iodel: <u>Mo</u>	nsoon flot
Time	Temp (°C)	Conductiv (mS/cm) or (aS/cm)	%DO	DO (mg/L)	рН	ORP (mV)	Water Level	Flow Rate (L/min) or (mL/min)	Turbidity (NTU)	Purge Volume (L) or (mL)	Additional Comments
1335	20.8	1495	24.8	2.17	7.0	1 -/23.9	22.80	275	917		-remued medalis
1338	21.6	1483	10.5	0.90	6.80	-171.7	23.18	375	242		- well had so lid or no tight
1341	21.5	1463	9,7	0.85	6.7)	-181.6	2295	225	264		Irdanduns organism med
1344	21.5	1470	8.9	0.78	6.75	-18/2.2	22.95	d75	193		-cleared mud plus
1347	21.7	1477	8.0	0.70	6.74	-189.1	22.98	275	118		-cuater very turbid.
1390	21.8	1478	7.6	0.67	6.74	-191.6	22.98	250	14.7		
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Sheet _____ of ____ Date: <u>12/02/15</u>

Field Record of Well Purging and Sampling

Well ID:	MVU-C	3	Sample ID			Sample Time:	1///0				
		2" AC			Well locat	ion: Behard S			······································	Weather: C	larly 2600F
Screened in	iterval(s): 2	<u>'-35</u>	nichtiffe sowe en er en im der en	radional control of the superior to the second of	Sampling			John B.	nandi (giran mananang risini di		
Total depth: 35.5' Sampling method: 16w flow micro punc											
Initial depth to water (w/o pump): 22.50 Water level indicator: Heron											
Final depth	to water (w/o j	pump): OCO	R. 64		Water qua				idir menganakan dan dianggan anggin bersakan dan dianggan dan dianggan dan dianggan dan dianggan dan dianggan		
Measuring point: North side of casing					Pump dep	th setting: 29	<i>—————————————————————————————————————</i>		Pump type/n	nodel: Ma	ppen fro
Time	Temp (°C)	Conductiv (mS/cm) or (µS/cm)	%DO	DO (mg/L)	рН	ORP (mV)	Water Level	Flow Rate (L/min) or (mL/min)	Turbidity (NTU)	Purge Volume (L) or (mL)	, , , Additionąl Comments
1123	21.9	1077	10.0	0.38	6.64	19.2	23.89	425	OR		- High furbidity
1126	22.2	1084	11.9	1.02	6.58	-1.2	22.79	200	OR		
1129	22.6	1081	9.6	0.82	The second of th	-29,4	22.94	250	828		
1132	22.6	1076	91	0-82	6.59	-56.4	22.94	350	456		
1135	22.8	1078	8-8	0.76	659	-73.6	22.98	300	292		
1138	22.7	1075	8.4	0.72	6.60	-%.7	22.90	125	148		
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Well ID:	MW-0	Q	Sample ID:			Sample Time:				Philosophis	
Casing dian	neter/type: 🎿	2"906			Well loca	ition: SW Car	ner lst			Weather: (landy 50°F
Screened ir	nterval(s): 🥏	35"			Sampling	personnel: づめ	n Bonner	Dieen	e T		
Total depth:					Sampling		y Plan		rae		
	to water (w/o	pump): ろ	3.76			vel indicator: 🕹	leron	9			
Final depth	to water (w/o	oump):	***************************************	············	Water qu			07			
Measuring p	point: North s	ide of casing			Pump de	pth setting: 34	5		Pump type/m	nodel: <i>55</i> /	Monsoon
	T	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	T	1	1	T	1			1	
Time	Temp (°C)	Conductiv (mS/cm) or (µS/cm)	%DO	DO (mg/L)	рН	ORP (mV)	Water Level (feet btoc)	Flow Rate (L/min) or (mL/min)	Turbidity (NTU)	Purge Volume (L) or (mL)	Additional Comments
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Jones Road Superfund Site -Harris County, Texas

Field Record of Well Purging and Sampling

Well ID:	MWO	2	Sample ID:			Sample Time:					
Casing diar	meter/type:	2"Pu				ition: BFE la	+	11	u 13	Weather: R	un, sof
Screened in		20-35					n Theme		1175		
Total depth			1177			method: low f		apporge			
	to water (w/o p	the same of the sa	. 43				T P	,			
	to water (w/o p					-Dra-	I BO	and the second s	·	P.	M
Measuring	point: North si	ide of casing			Pump de	pth setting: 5	4		Pump type/m	nodel: 1/0	Monsian
Time	Temp (°C)	Conductiv (mS/cm) or (µS/cm)	%DO	DO (mg/L)	pН	ORP (mV)	Water Level (feet btoc)	Flow Rate (L/min) or (mL/min)	Turbidity (NTU)	Purge Volume (L) or (mL)	Additional Comments
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and the second s					CONTRACTOR OF THE PROPERTY OF	01	11.1 11	1.7	n llor	3	
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Well ID:	MW-E		Sample ID:			Sample Time:	1025				
Casing dian	neter/type: C	2" PUC 5.5 - 35.			Well loca	tion: BBQ U	100d;			Weather: Ko	othy Closely 600
Screened in	terval(s): 20	5.5-3S.	.5			personnel: Dua	ne Thomas				
Total depth:	36.5				Sampling	method: Low	Row mi	LOQUEC)		
Initial depth	to water (w/o	pump): 20	1/2		Water lev	vel indicator: He	on			skataunatori i iniga parimondo di minus servicas.	
Final depth	to water (w/o p	oump): 👌	<u> </u>		Water qu	ality meter: YS	<u> </u>				
Measuring p	oint: North s	ide of casing			Pump de	pth setting: 📿	5		Pump type/m	iodel: Mov	150an Pro
Time	Temp (°C)	Conductiv (mS/cm) or	%DO	DO (mg/L)	рН	ORP (mV)	Water Level	Flow Rate (L/min) or (mL/min)	Turbidity (NTU)	Purge Volume (L) or (mL)	Additional Comments
1005	22,3	388.7	12,1	1.0/	7.0	-87.0	20.50	300	545	(L) OF (IIIL)	-weter filler with
1008	25,0	405,3	8.60	0 72	7/8	The state of the s	20.65	400	698		debris
1011	23.2	4140	7.6	0,05	7.18	-126,4	20.55	250	215-1		- odor of muda debus
1014	23.1	433.1	OZA	0.62	7.05	-141.9	20,59	300	278		From Filling cluring
1017	23,4	462.1	6.9	0.50	7.16	-147.4	20.Cer	425	178		destruction
1020	23,5	474,2	6.8	0.58	7.07	-140.0	20.74	425	158		- twilly clewing
1023	23,4	493	76.6	0,56	7.07	-137.5	21.0	425	109		
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	Road Superfund Site	
Harris	County, Texas	

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Well ID:	MW-	09	Sample ID:			Sample Time	0915				
Casing diar	neter/type:	2'91			Well locat	ion: Ace S	South lo	<u> </u>		Weather: Co	oly Cloudy 6005
Screened in		0-35	CONTRACTOR		Sampling	personnel: $\int_{\mathcal{O}}$	auc Iho	21AS	***************************************		
Total depth	35				Sampling	method: low	flow me	GOONGE	ana a a a a a a a a a a a a a a a a a a	······	
Initial depth	to water (w/o	pump): 2Cg	,96		Water leve	el indicator: \mathcal{H}	eron				
Final depth	to water (w/o p	oump): 27). 74 <u> </u>		Water qua	ality meter: Y	<u>SI PRO</u>		Name and the second	anno carrier contra con a constitui de la contra	
Measuring (ooint: North s	ide of casing	·	TOTAL CONTRACTOR OF THE PARTY O	Pump dep	oth setting: 3	<u>'</u> 0'		Pump type/m	odel: Mo	1500n Pro
Conductiv (mS/cm) or DO (mg/L)				1	Нq	ORP (mV)	Water Level	Flow Rate (L/min) or (mL/min)	Turbidity (NTU)	Purge Volume (L) or (mL)	Additional Comments
20.0	19.9	673	26.5	2,53	6.92	1609	28.19	250	700		-wastes steptly forted
0900	20.6	691	24.9	2.23	10.71	1560/	27.91	200	272		
0903	21.3	698	22.4	1.28	Colda	152.6	28.13	200	367		
0906	21.3	702	<i>31.</i> 2	1.88	6.65	150.0	28.19	200	315		
0909	22.1	710	19,7	1.70	6.65	147.2	28.20	200	058		
0912	221	712	18.5	1.40	6.65	143. G	20.25	175	184		
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Date:	121	a	15		
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Well ID:	MWW	Ď.	Sample ID:			Sample Time	:					
Casing diar	meter/type:	2" PX		·		ation: Center V	1	s Joh	0	Weather:	olly Cloudy	
	nterval(s): α	15 50		AMOUNTATION OF THE PROPERTY OF		g personnel: Pua	<u>ni Thornice</u>	<u>5 , Jon</u>	<u> </u>	and the state of t	and the state of t	
Total depth					***************************************		Plow MIGO	purse	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	and the second of the second o	·	
Initial depth	to water (w/o	pump): 27.	_/5		Water le		4501					
Final depth	to water (w/o p	pump):			Water qu	uality meter: Y	<u> SI 110</u>					
Measuring	point: North s	ide of casing	\$20 0,000,000,000	***************************************	Pump de	epth setting:	de grande de la companyación de la		Pump type/n	nodel: Ma	nson Mo	
·	T		1	T	Т	7		maasaanan oo	T	1	<u> </u>	
Time	Temp (°C)	Conductiv (mS/cm) or (µS/cm)	%DO	DO (mg/L)	рН	ORP (mV)	Water Level (feet btoc)	Flow Rate (L/min) or (mL/min)	Turbidity (NTU)	Purge Volume (L) or (mL)	A	dditional Comments
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Jones	Road Superfund	Site	
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Well ID:	MW-a)(Sample ID	:		Sample Time:	1335						
Casing dia	meter/type: D	2"RV			Well locati	ion: Store from	it, lave l		in the second	Weather: (Touty and - 50°		
Screened in	nterval(s): 😞	25-30			Sampling	personnel: Wa.	ne T. Jo	hs B		advinos e la companione de la companione d			
Total depth	32'	-			Sampling	method: Low	Flow pre	em AUG	<u>e</u>				
Initial depth	to water (w/o	pump): 27	144		Water leve	el indicator: \mathcal{H} e	101	<i>j.</i> - <i>j</i>		ellettikannakrisissaaten viirtelettikijoiseksissaanna			
Final depth	to water (w/o j	pump): 27	7.7Ce		Water qua		dagaaan aan aa ah	ar an annual					
Measuring	point: North s	ide of casing	**************************************		Pump depth setting: 29' Pump type/model: Marsoch 110								
Temp (mS/cm) or DO				1		ORP	Water Level	Flow Rate (L/min) or	Turbidity	Purge Volume			
Time	(°C)	(µS/cm)/	14,0	(mg/L)	PH /	259.7	(feet btoc)	(mL/min)	OK	(L) or (mL)	Additional Comments		
BAL	3/3	1097		1/1/	6.60	239.1	28.41	150	MANUAL PROPERTY AND ADDRESS OF THE PROPERTY OF		-water tribia		
1334	23. L	1	15.1	1.26	(e.50)			150_	DR NO		-very Gre particles		
1327		1084	14.3	1.22	6.51	228.L	28.21	/50	OR .				
1330	25.9	1147	11.9	0.97	6.5	2115	2900	350	OR				
1333	26.2	1154	10.0	0.20	6.52	202.1	24.00	150	012_		probe on pump		
economic grammatic de la Maria de magazant de Maria													
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Date: 11/30/15	
	

Well ID:	MW-2	2	Sample ID:			Sample Time:	1358						
Casing diar	neter/type:	2"PK	***************************************		Well locat	ion: SW Cor				Weather: <	lady Do		
Screened in	CONTRACTOR OF THE PROPERTY OF		devenous constitution and the second constitution of the second constitutio	······································	Sampling	personnel: ()	vans The	mu J	Jun Bunn	nest_			
Total depth	: 55	,50			Sampling			1400 0016	e	***************************************			
Initial depth	to water (w/o	pump): 🎸	9.34		Water lev	el indicator: \mathcal{H}	45/Dp						
Final depth	to water (w/o j	oump): 🍮	<u>5.50.4</u>	1.40	Water qua	ality meter:	SI PIO						
Measuring	leasuring point: North side of casing Pump depth setting: 53 Pump type/model: Mortsona Pro												
Time	Temp (°C)	Conductiv (mS/cm) or (µS/cm)) %DO	DO (mg/L)	рН	ORP (mV)	Water Level (feet btoc)	Flow Rate (L/min) or (mL/min)	Turbidity (NTU)	Purge Volume (L) or (mL)	Additional Comments		
1334	22.9,	1030	43.2	3,41	(0.46)	196.9	•	325	26.9		I Wayer levels low		
1337	24.4	1089	21.4	1,15	6.43	186.6	50.98	275	3/9		= Ce' of water in well		
1340	24.2	1089	13.2	1.10	6.45	- 170.0	50.71	205	946		-moster turbed check		
1343	24,5	1094	61.3	0.95	6,46	172.4	50,49	200	OVER		blank 103 NTU		
1346	24.1	185	10.90	0.91	6.47	166.0	49.70	175	949		- very fine purlicles in		
B49	23.9	1082	10.28	0.86	6.47	162.5	49.75	250	OVER		raising pump to see F		
1352	24.5	1096	9.5	0.78	6.47	156,5	49.75	150	OVER		Lubidits clears		
1355	24,6	/09/	9,2	0.77	6.40	139,0	49.89	300	OVER		- super Fine proficles		
AND THE SHAW CONTRACTOR											pump pulled to 51		
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Field Record of Well Purging and Sampling

Well ID:	MWa	3] Sample ID:			Sample Time:					
Casing dia	meter/type: O	PUL			Well locat	tion: BFE 20	sit is			Weather:	Run, 50%
Screened	interval(s): 4	<u>8-53' </u>			Sampling	personnel: Um	ne 7 d =	John B		200 min 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	
	1. Confer				Sampling	method: Lon	Plan 1	PILIDAVIE	e	William and American Market State (1997)	
Initial dept	n to water (w/o		P1 46,42) ~	Water lev	rel indicator. Mel	DA	in and the second se	-commences accessed from the recommendations	overster water even more of the measure of the analysis of the	
Final depti	to water (w/o	oump): L	6.42	itra tuttus saa saana puonna Artonia Artonia Sonogonissa.			J. Ro	one and the content of the content o	necessary from the contract of	erzickowowe promotoreammuniwania nagyich trethich	
Measuring	point: North s	ide of casing	in Standing out of a complete motor discrete and a complete from the	on the second	Pump der	oth setting: 50.5	5	the work of the third of the state of the special s	Pump type/n	nodel: 35	Monson Bo
rintender (del gra a est responsa a del conservir a del		regional houseassering him house transland (e		ng antonous analos and more services and the		প্ৰসংগ্ৰহণী প্ৰসংগ্ৰহণ সভা টেকিল কৰিছিল কৰা দুৰ্গত শ্ৰমানকৰ বিশ্বনিক্তি	apa vaa areenaannaa areenaa ar	Territorio de la como de la composição d	1		
	Temp	Conductiv	No. of Contraction of	80	***************************************	ORP	Water Level	Flow Rate	Was all automic	Purge Volume	
Time	(°C)	(m3/cm)_or	%D O	(mg/L)	рН	(mV)	(feet bloc)	(Umin).or Initimized	Turbidity (NTU)	(L) or (mL)	Additional Comments
(334)	23,5	TOIT	29	1.00	681	(0.81	48.01	690H5	2796		
0839	22.5	620	17.7	1.54	6.78	-1796,4	47.80	3337	33.4	A CONTRACTOR CONTRACTO	-orp seem to be affected
0338	103:0	630	15.8	1.34	6.78	-1324.7	4763	835	Rel	and the second s	by inrechall
799/	122.8	[G. D. D.	165 y Last	1.34	6.79	-1084-8	47.40	150	1902		
0844	TARR	1634	15.1	1.29	6.79	1860.7	47.35	Secretary and reserves to the secretary and the second	158		
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A Comment of Minarian Comment of the Comment		made Theory (1975) of the State	ence-period to entire interestation of the first squarter of the second	Colored transmit and the second		क्षा कर व स्थानकारण राज्य अञ्चल के विशेषित विशेषकारण विशेषका स्थापित स्थापित स्थापित स्थापित स्थापित स्थापित स स्थापित स्थापित स्थापि	AND SECURE AND ADDRESS OF THE PERSON ADDRESS OF THE PERSON AND ADDRESS OF THE PERSON ADDRESS OF TH	whee a transfer to the state of	ANNESSE STATE OF THE STATE OF T	March Control of the Street Control of the Street	
Control American and State (Marie Control of American Ame	Marie a contract of the second of the second of	CHARLES CONTRACTOR STORM CONTRACTOR	Name of the state	cchilitiaaaaaamotootootoaaaa	TTS TO SELECTION OF THE PARTY.	gendagin am nasara mengang pendagan tangga serata penggangkan ang am-an-an-an-an-	AND RESIDENCE AND PROPERTY OF TAXABLE SPECIAL	emblem on a Consequent many and a september of the consequence of the	<u>nedda yn t gynnyllyddiol yn gann y gann y gann y gann y gann y gynn</u>	VIII. TOPOLETINITE COMMENT OF THE CONTROL OF	
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THE PROPERTY OF THE PROPERTY O	Newson Capatian Company	ar vanavens oor soor soor sold in it gegreen van van de bedeel	T DESMONERA ** 1887 POLITICA (1964) ON REPORT A DE DESCRIPTION DE SERVICIO DE SERVICIO DE SERVICIO DE SERVICIO	entertalista de la companio de la c	and the second second and the second	.) \ \ \ \ \ \	Control of Congress Williams and particles	et all the least of the least o	NP kommunikan temperatur melikan Hillion	and the same of th	
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Date:	01/15

Screened interval(s): 48-53 Sampling personnel: John Borner, Ware T Total depth: 55 Sampling method: Cow Flow mecaguse Initial depth to water (w/o pump): 9.81 Water level indicator: 17 erron Water quality meter: YST Pro	
Sampling method: Conv Place Properties	
Sampling method: Conv Place Properties	F
Sampling method: Conv Place Properties	
Water level indicator:	
North side of casing	
North side of casing	
Time (°C) (mS/cm) or (
Time (°C) (mS/cm) or (
9953 22.3 38.3 205 1.78 842 251.6 20.48 200 41.4 ~91/h damed con or	ments
0956 82.6 533 16.5 1.39 7.18 236.8 21.10 250 48.8 0959 21.8 528 15.8 1.34 7.12 230.4 21.75 350 65.9 1002 23.9 546 12.9 1.077.11 224.4 22.01 200 53.5 1005 23.3 521 12.1 1.03 7.19 214.6 22.70 200 33.8	
0959 21.8 528 15.8 [.34 1.12 230.4 21.75 350 65.9] 1002 23.9 546 12.9 1.077.11 224.4 22.01 200 53.5 1005 23.3 521 12.1 1.03 7.19 214.6 22.70 200 33.8	
1002 33.9 546 12.9 1.077.11 224.4 22.01 200 53.5 1005 23.3 521 12.1 1.03 7.19 214.6 22.70 200 33.8	
1005 3.3 521 12.1 1.03 7.19 214.6 22.70 200 33.8	
1,2,0,5,0	**************************************
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	GETT-CORRECTION STATE COMES OF THE TANKS

Sheet 1 of 1 Date: 09 20 2016

Field Record of Well Purging and Sampling

Well ID:	MW-0		Sample ID	MW-0	A STATE OF THE PARTY OF THE PAR	Sample Tim	ie: 08 34				
Casing diam	neter/type:	2mch PVC		MW-01-	- M) Well loca	tion: CUPTE	55 Centre			Weather: 7	to Sunny
Screened in	terval(s): 1	- 35			Sampling	personnel:	aria B. ;	John B			
Total depth:	34.79				Sampling	method: Lay	- Flow				
	to water (w/o	pump): 23.	49		Water lev	vel indicator:	Oper - T				
Final depth	to water (w/o j	0.4			Water qu	ality meter: $\sqrt{5}$					
Measuring p	oint: North s	ide of casing			Pump de	pth setting: 29	. 14		Pump type/n	nodel: Goo p	pump Monsoon
Time	Temp (°C)	Conductiv (mS/cm) or (µS/cm)	%DO	DO (mg/L)	рН	ORP (mV)	Water Level	Flow Rate (L/min) or (mL/min)	Turbidity (NTU)	Purge Volume (L) or (mL)	Additional Comments
08 15	X - 7	0::-								T 101	@ Pump on
08 17	25.55	2.329	46.2	3-65	6.19	- 103 . 1	24.65	300 1	61.3	500 ML	1000
08 20	25.89	2.345	27 .0	2.14	6.22	- 115.7	24.81	200	61.8	750 mL	
08 23	26.38	2.389	22.0	1.75	6.25	-115.6	25.12	200	58.7	1.01	
08 26	26.45	2.400	18.7	1:50	6.27	-115.9	25.13	225 m L/mi		1.5L	
09 29	26-80	2-426	17.8	1.40	6.28	- 119.8	25.33	250 mL/mir	46.0	3.0 L	
VO Z1	40 - 80	2-120	11.0	1-10	0.20	- 111.0	20.20	Z:X/ 1114/19/19	10.00	800 1	Final Water Lovel = 25.61
								1	T,		
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Sheet	of
Date:	09/20/2016

							9	9	. 3		
Well ID:	MW-0	2	Sample ID:	MW-0	2	Sample Time	e: 11 54				
Casing diam	eter/type:	PIC Zinch			Well locati	on: Cypress	Centre			Weather: 000	Gunny
Screened in	terval(s):	2-35			Sampling	personnel:	aria B.	John B.			
Total depth:	34	1.54			Sampling	method: [Ju)	- Flow				
Initial depth	to water (w/o	pump): 21.8	j		Water leve	1	ppex-T				
		pump): 22.73			Water qua	Size					
Measuring p	oint: North	side of casing			Pump dep	th setting: 28	18		Pump type/m	nodel: Mansaor	
Time	Temp	Conductiv (mS/cm) or	%DO	DO (mg/l.)	nH Ha	ORP (mV)	Water Level	Flow Rate (L/min) or	Turbidity	Purge Volume	Additional Comments

Time	Temp (°C)	Conductiv (mS/cm) or (µS/cm)	%DO	DO (mg/L)	рН	ORP (mV)	Water Level (feet btoc)	Flow Rate (L/min) or (mL/min)	Turbidity (NTU)	Purge Volume (L) or (mL)	Additional Comments
11 32											Pump - on
11 33	27.37	1.612	121.4	9.34	5.29	-94.1	23.32	150 mL	175	150 mL	
11 36	27.08	1.599	84.1	6.68	4.87	- 78.7	24.21	200mL	260	450 mL	
11 39	26.27	1.565	72.5	5.77	4.53	~ 70	25.29	200 mL	220	750 mL	
11 42	26.86	1.583	56.7	4.52	4.55	-72.2	25.30	225 m L	201	11	Water had a dark
1145	76.80	1.585	52.0	4.16	4.56	-73.9	25.55	250mL	120	1.5L	color
1148	25.90	1.565	48.0	3.87	4.37	-70.3	25.93	250mL	86	2.504	
1151	25 68	1.557	44.5	3.61	4.32	-61.0	26.02	300mL	82.6	3.50L	
									8		
		1									
						· · · · · · · · · · · · · · · · · · ·					

Recorded By: Mara Briceno

Sheet		_ (of
Date:	no	121	12011
	VI	171	LAIL

Well ID:	MW - 03		Sample ID:	MW-03		Sample Time	10/2				
Casing diam	Λ.	Zinch PVC				n: Behind	Cypress	Centre		Weather:	35° Sunny
Screened int		5-35				ersonnel: Mar		John B			
Total depth:	35		7.0				Flow				
Initial depth t	o water (w/o		73			indicator: dipp	U-1				
Final depth t	o water (w/o p	oump): 21	3		Water quali	ity meter: 151	m r			AA a	201-120
Measuring p	oint: North s	ide of casing			Pump dept	h setting: 18.75	IMB 27.5		Pump type/m	odel:	MSOON
Time	Temp (°C)	Conductiv (mS/cm) or (µS/cm)	%DO	DO (mg/L)	рН	ORP (mV)	Water Level (feet btoc)	Flow Rate (L/min) or (mL/min)	Turbidity (NTU)	Purge Volume (L) or (mL)	Additional Comments
09 49							8				Pump on
0951	23.14	0.622	24.4	2.09	5.80	5.5	21.13	300	41.5	600mL	
09 54	22.64	0.600	20.7	1.84	4.94	46.8		<u> </u>		_	
99 57 Ma		0.00	20-1			15 9		A. T			YSI Lanking stop to adjust
1000	22.29	0.620	34.3	2.98	4.93	125.1	21.17	300	19.1	600 mL	1 1 1 1 1
10 03	22.41	0-649	29.3	2.51	5.04	120.3	21-16	300	12.2	600mL	
10 06	22.54	0.727	29.3	2-53	4.92	165.8	21. 16	300	6.63	600mL	
10 09	22.58	0.759	30.0	2.59	4.88	193.6	71.15	300	6.36	60mL	
10 01	10.00	0.177			109	.,,,					

Sheet	1	(of	
Date:	M	111	1201	1
	VI	17	141	0

Well ID:	MM-05	4	Sample ID:	MW-0	4	Sample Time	e: 11 35				
	eter/type: 2				Well locati	on: Bohin personnel: Mar	d Capross	Centre		Weather:	D° Sunny
Screened in	terval(s): 2	.5 - 35			Sampling	personnel: Mar	a B. "; Jor	11 B			
Total depth:					Sampling i	method: LOW -	Flow				
Initial depth	to water (w/o		t MB 20.17	-	Water leve	el indicator: ₩	+MB				
Final depth t	o water (w/o p	oump): 20.	96		Water qua	lity meter:					
Measuring point: North side of casing Pump depth setting: 8 15 marts 22.5 Pump type/model: VONCON											
Time	Temp (°C)	Conductiv (mS/cm) or (µS/cm)	%DO	DO (mg/L)	рН	ORP (mV)	Water Level (feet btoc)	Flow Rate (L/min) or (mL/min)	Turbidity (NTU)	Purge Volume (L) or (mL)	Additional Comments
11 12											Pump on
11 15	21 91	1.483	23.7	1.94	5.10	112.7	22.07	250	60.8	500 mL	1313
11 18012	21.61	1.496	32.2	2.73	4.98	196.5	22.21	300	18.4	500mL	Yol looking ton for
1127	21.59	1.507	22.1	1.94	4.93	194.3	22.5	300	7.73	EDML	Yol baking, stop to adjust
1130	21.50	1.499	22.1	104	4 76	230.5	22.5	300	6.17	600mL	04)071
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Recorded By: Maria Briano

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Sheet		_ of	1	
Date:	M	121	1001	1
	VI	141	1201	0

Well ID:	MW-0	5	Sample ID	: <u>Mw</u> -()5	Sample Time	12 50				
		2 inch PUC			Well locat			s Centre		Weather:	0° Sinny
Screened int		- 35			Sampling	personnel: NOY	ja B; J'John	1 B.			
Total depth:	35		0.3		Sampling	method: (0)	Paw '				
	to water (w/o	0.1	0°MB 20.8				oper-T				
Final depth t	o water (w/o p	oump): 2,	0)		Water qua	ality meter: 151					
Measuring p	Neasuring point: North side of casing Pump depth setting: 27, 9 Pump type/model: MON5000										
Time	Temp (°C)	Conductiv (mS/cm) or (µS/cm)	%DO	DO (mg/L)	рН	ORP (mV)	Water Level (feet btoc)	Flow Rate (L/min) or (mL/min)	Turbidity (NTU)	Purge Volume (L) or (mL)	Additional Comments
1236											12 Pump on
12 38	25.51	1.052	52.7	4.32	4.93	549.8	21.22	300	248	900 mL	The rolling of
12 44	23 57	1.0/3	-23.5	1.99	4.13	616.8	21.24	250	532	750mL	
1244	23.22	1,008	21.8	1.85	4-16	636.5	21. 20			760 -1	
12 47	23.27	1.027	21.9	1				250	530	750mL	
12 41	67.61	1.021	24.7	1.85	4.29	638.8	21.24	250	454	750mL	
						W-W-					
							-				

Recorded By: Maria Briceno

Sheet	1	_ 0	f)	
Date:	M	191	1001	6
77710	01	121	1 201	0

Well ID:	MW-		Sample ID:	MW-06		Sample Time	e: 07 45				
Casing diam		Zinch PVC			Well location			ماما امام		Weather: 8	2° Sunny
Screened in	terval(s):	2-35			Sampling p		Maria Brice	rw; Junn	Bonner		
Total depth:	35	12	17		Sampling n		D			4	
	to water (w/o		13		Water level						
Final depth t	to water (w/o	pump):			Water quali	ty meter:					
Measuring p	oint: North	side of casing		-	Pump depti	n setting:			Pump type/m	odel:	
Time	(°C)	Conductiv (mS/cm) or (µS/cm)	%DO	DO (mg/L)	< 0.1pH pH	ORP (mV)	< 0.3p+ Water Level (feet btoc)	< L/min Flow Rate (L/min) or (mL/min)	Turbidity (NTU)	< 0.51/min Purge Volume (L) or (mL)	Additional Comments
											Used a bailor to collect sample

Recorded By: Maria Briceno

Sheet	Ì	of	1
Date:	09	121	Inil
_	-	141	12010

Well ID:	MW-0.			MW-0:	1	Sample Time	09 25				
Casing dian		Zinch Pl	C		Well loca	tion: Cypress	Centre			Weather:	90° Sunny
Screened in		0-35			Sampling	personnel:	iria B. i C	John John	В.		1
Total depth:	35				Sampling	method: Low -	Flow /G	ab			
Initial depth	to water (w/o	pump): 28.05			Water lev	el indicator:					
Final depth	to water (w/o	pump):			Water qu	ality meter:	51				
Measuring p	Pump depth setting: 31. 5										
Time	Temp (°C)	Conductiv (mS/cm) or (µS/cm)	%DO	DO (mg/L)	рН	ORP (mV)	Water Level (feet btoc)	Flow Rate (L/min) or (mL/min)	Turbidity (NTU)	Purge Volume (L) or (mL)	Additional Comments
						7					Pump would not go through the well. Decided to tuse a baijlor
	1111										
				5							

Recorded By: Maria Bricano

Sheet)	of	1
Date:	na	120	12016
and the same	01	-	

Well ID:	MW-08	3	Sample ID:	MW-08		Sample Time	e: 13 55						
Casing diam		2 inch PVC	MS	MSD	Well location			4-KAR		Weather:	00° Sunni		
Screened int	erval(s):	10.5 - 35 5			Sampling personnel: Maria B. John B.								
Total depth:	-33-8		5		Sampling method: Low - Flow								
Initial depth	o water (w/o		2		Water level indicator: diport -1								
Final depth t	o water (w/o p	oump): 18,5			Water quality meter: YST								
Measuring p	oint: North s	ide of casing			Pump depth setting: 26, 3] Pump type/model: Monsoon								
Temp (°C) (µS/cm) %DO (mg/L)						ORP (mV)	Water Level (feet btoc)	Flow Rate (L/min) or (mL/min)	Turbidity (NTU)	Purge Volume (L) or (mL)	Additional Comments		
13 35											Pump On		
13 36	24.36	0.835	\$ 39.1	3.26	5.17	393.4	19.67	300 m L/m	301	1500mL			
1339	24.26	0.834	28.1	2.32	4.60	436.5	19.69	350 mUm	175	900 ml			
1342	24.0F	0.830	22.8	1.93	4.07	549.9	19.61	300 mL/min	78.8	1.5 L			
1345	24.37	0.837	21.9	1.82	3.95	585.0	19.61	250mL/min	50.8	2.0L			
13 49	24.28	0.840	21.0	1.75	3.74	605.5	19.60	250 mym	, 41.3	2.5 L			
1351	24.62	0.840	19.9	1.64	3.64	622.2	19.58	250 ml/min	32.0	3.0L			

Recorded By: MUNIO BILLONO

Sheet ____ of ____ Date: ________

Field Record of Well Purging and Sampling

Well ID:	MW-0	9	Sample ID:	MW-(79	Sample Time	13 35				
Casing diam		2inch PVC	ŧ		Well location	on: In FMB	Next to	ACE How	dware	Weather: 80	7° Sunny
Screened in	erval(s): 20	1-35		water to	Sampling p	ersonnel: Mari		in B.			1
Total depth:	35				Sampling r	nethod: _0W	Flac '				
Initial depth	to water (w/o p				Water leve	I indicator: chip	ver T				
Final depth t	o water (w/o p	oump): 24,0	5		Water qual						
Measuring p	oint: North si	ide of casing			Pump dept	h setting: 27-5	MB 29.5		Pump type/m	nodel: 4 Ons	00 D
Time	Temp (°C)	Conductiv (mS/cm) or (µS/cm)	%DO	DO (mg/L)	рН	ORP (mV)	Water Level (feet btoc)	Flow Rate (L/min) or (mL/min)	Turbidity (NTU)	Purge Volume (L) or (mL)	Additional Comments
13 20											Pump on
13 23	24 42	1.180	30.8	2.59	5.29	269.9	24.90	350	131	1.002	
13 26	23.36	1.145	24.7	2.10	4.41	402.8	24.84	300	139	1,002	
1329	24.04	1,160	28.7	2.41	4.00	565.0	24.83	300	101	1.001	
13 32	24.03	1.156	29.2	2.47	3.80	599.8	25.03	300	66.5	1.00L	
						10 10 10					
										4	

Recorded By: MONIO BILLION

Sheet	Ì	_ of	
Date:	09	100	Innie
	01	177	12010

Well ID:	MW-20)	Sample ID:	MW-20		Sample Time:	08 55				
Casing diame	eter/type: 2 erval(s): 25	inch PVC			Well location	on: Cypress personnel: Moric	Contre B ; John	R		Weather:	0° Sunny
	32	20			Sampling r						
Total depth:	o water (w/o p	oump): 26.48)		Water leve	1.	per - T				
	o water (w/o p	00			Water qual	VI	01 1				
			0 1		Pump dept	17 -			Pump type/m	odel: M0050	200
Neasuring point: North side of casing Pump depth setting: 27.3 Pump type/model: \\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\											
Time	Temp (°C)	Conductiv (mS/cm) or (µS/cm)	%DO	DO (mg/L)	рН	ORP (mV)	Water Level (feet btoc)	Flow Rate (L/min) or (mL/min)	Turbidity (NTU)	Purge Volume (L) or (mL)	Additional Comments
08 42											Pump on
08 43	26.47	2.588	54	4.32	5.87	-60	27.02	300	447	500 mL	
0846	26.23	2.325	21.6	1.70	5.81	-51.9	27.13	300	482	500mL	Water had a brownish color
0849	26.58	2.232	18.2	1.45	5.74	-30.1	27.03	250	332	500 mL	
08 52	26.91	2.166	18.2	. 1. 44	5.67	-8.0	27.24	300	3130278	GOOML	

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Recorded By: MOVIA BRICAN

Sheet	1	of	1
Date:	00	1112	12016
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Well ID:	MW-	21	Sample ID	MW-	21	Sample Time	0810						
Casing diam	neter/type: 2	inch PVC			Well locat	tion: Cypress	Centre			Weather: 78	3° Sunnu		
Screened in	terval(s): 2	5 - 30			Sampling personnel: Maria B. John B.								
Total depth:	2.0				Sampling		Flou						
	to water (w/o p	oump): 25-6	65			el indicator:							
Final depth	to water (w/o p	ump): 25.	77			ality meter:							
Measuring point: North side of casing Pump depth setting: 27.5 Pump type/model: MISCON													
Time	Temp (°C)	Conductiv (mS/cm) or (µS/cm)	%DO	DO (mg/L)	рН	ORP (mV)	Water Level	Flow Rate (L/min) or (mL/min)	Turbidity (NTU)	Purge Volume (L) or (mL)	Additional Comments		
07 51											Pump on		
07 54	24.77	1.063	44.1	3.67	5.98	231.7	26.16	500 m Um	24.1	700mL	1 000/7		
07 57	24. 61	1.036	19.2	1,57	5.93	333.5	26.05	250m4m	35.2	● 500mL			
08 00	24.83	1.042	15.5	1.27	6.01	374.6	26.02	250m L/m	24.0	500mL			
08 03	25.02	1.050	14.7	111	6.11	408.6	26.04	250mL/m	15.5	500mL			
0807	25, 05	1.052	4.2	1.18	6.16	426.2	26.03	250m/m	11 7	500mL			
0007	24, 00	11000			071	100.2	20100	200117117	11.07	00 1112			
						11/1/10/A/11/11/A/10					-		
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Recorded By: Maria Briano

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Sheet	of	
Date:	19/21/2016	
	0.1-1-0.0	

Casing diametertype: 2 PV Weather 90° Smly Screened interval(s): 10° 53° 38° Sampling personnel 10° 6 (70) Total depth: 55° Sampling personnel 10° 6 (70) Water quality meter: Pump type/model: Pu	Well ID:	MW-2		Sample ID:	MW - 22		Sample Time	: 08:15				
Total depth: 55 Sampling method: 6 Grath	Casing diam	neter/type:	2" PVC			Well locat	ion: CUDITES!	s Contre			Weather: \mathcal{E}	80° Sunny
Total depth: 55 Sampling method: 6 Grath		terval(s):	48 - 53				personnel: N	aria B. : Joi	hn B.			
Initial depth to water (w/o pump): 53-36 Water level indicator: Final depth to water (w/o pump): Water quality meter: Measuring point: North side of casing Pump depth setting: Pump type/model: Temp (°C) (mS/cm) or (µS/cm) %DO (mg/L) pH (mV) (feet btoc) (mL/min) or (mL/min) (NTU) (NTU) (NTU) Additional Comments Additional Comments		~ _					method: 🖟 G	rab				
Measuring point: North side of casing Pump depth setting: Pump type/model:			pump): 53	1-38		Water lev						
Temp (°C) (mS/cm) or (µS/cm) %DO (mg/L) pH (mV) (feet btoc) (feet btoc) (nL/min) or (mL/min) (nTU) (nT	Final depth	to water (w/o	pump):			Water qua	ality meter:					
Temp (mS/cm) or (°C) (μS/cm) %DO (mg/L) pH (mV) (feet btoc) (mL/min) or (NTU) (NTU) Additional Comments	Measuring p	oint: North	side of casing			Pump de	oth setting:			Pump type/m	nodel:	
	Time		(mS/cm) or	%DO					(L/min) or	Turbidity (NTU)	Volume	
												sample
	N.											

Recorded By: Maria Bacent

Sheet	i.	of	1
Date:	119	111	ONIL
	VI	12.1	110

Well ID:	MA-24	2 MW-23	Sample ID	. MW-	73	Sample Tim	£012				THAT SHOWS
well ib.				AND - Oup	20	n				I I	
Casing diam		2 inch PVC	/	1-240 Dab	Well locati	on: (4)01055				Weather:	35° Sunny
Screened in	terval(s):	18-53			Sampling			ria B.			
Total depth:		11			Sampling i		Flow				
	to water (w/o		. 43			l indicator:					
	o water (w/o j				Water qua	T-				100	
Measuring point: North side of casing Pump depth setting: 5											
Time	Temp (°C)	Conductiv (mS/cm) or (µS/cm)	%DO	DO (mg/L)	рН	ORP (mV)	Water Level (feet btoc)	Flow Rate (L/min) or (mL/min)	Turbidity (NTU)	Purge Volume (L) or (mL)	Additional Comments
09 58											Pump on
09 MB	#	100									
10 01	25.19	0.674	40.0	3.29	5.73	263.8	45.10	250	150mb 15.2	250mL	
10 04	25.40	0.669	30.4	2.49	5.0	479.9	46.08	300mL	23.1	500mL	
FO 01	25.28	0.672	26.1	2.15	4.75	546.9	46-39	300 mL	264	900mL	
10 10	25.09	0.676	24.3	2.0	4.62	590.6	46.0	350 mL	344	900mL	
10 13	25.29	0.680	23.5	1.92	4.67	616.8	46,43	300 mL	182	900mL	
						W)					
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Recorded By: Maria Brano

Sheet	of
Date:	maria
	4/2/2016

Well ID:	MW - 2	14	Sample ID:	MW-2	4	Sample Time:	1350						
Casing diam	neter/type:	Zinch PI	JC,		Well locati	ion: O' Reily	Autoparts	5 parkina	a lot	Weather:	100° Sunny		
Screened in		3 - 53				personnel: Mari		onh B.		rrodinor.	100		
Total depth:	6-						low	771					
Initial depth	to water (w/o	oump): 19.4	7			el indicator: (10)							
Final depth	Final depth to water (w/o pump): 23, 46 Water quality meter: 151												
Measuring point: North side of casing Pump depth setting: 50.5 Pump type/model: Y 015000													
Time	Temp (°C)	Conductiv (mS/cm) or (µS/cm)	%DO	DO (mg/L)	рН	ORP (mV)	Water Level (feet btoc)	Flow Rate (L/min) or (mL/min)	Turbidity (NTU)	Purge Volume (L) or (mL)	Additional Comments		
1335											Pump on		
1337	27.01	0.430	44.5	3.51	6.30	399.9	20.53	200 mL	10.2	600mL			
1340	26.6	0.580	37.5	2.93	5.30	566.3	22.08	200 mL	65.3	600mL			
1343	25.24	0.587	26.9	2.17	4.92	624-4	24.15	300mL	57.7	900mL			
13 46	25.25	0.559	25.4	2.07	4-82	644.3	25.33	300mL	52.6	900mL			

Recorded By: MONIA BRICANO

Sheet	1	of	1
Date:	00	MI	11
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Well ID:	MW.	.25	Sample ID	MW - 29	5	Sample Time	»:				
Casing dia	ameter/type:				Well loca	tion: Ontury	Appliances			Weather:	70°s Sonny
Screened		23 -28		WI	Sampling	personnel:	Maria B:	idon B			J
Total dept	h: 30				Sampling	method: Grab	-MB				
Initial dept	h to water (w/o	pump): 29.	62		Water lev	el indicator:					
Final depti	n to water (w/o	pump):			Water qu	ality meter:					
Measuring	point: North	side of casing			Pump de	pth setting:			Pump type/m	iodel:	
Time	Temp (°C)	Conductiv (mS/cm) or (µS/cm)	%DO	DO (mg/L)	рН	ORP (mV)	Water Level (feet btoc)	Flow Rate (L/min) or (mL/min)	Turbidity (NTU)	Purge Volume (L) or (mL)	Additional Comments
											Sample was not colected
											S
											Dry Well
-											
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Recorded By: Maria Bricena

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Well ID:	N	lw-1	Sample ID:	MW	-1	Sample Time	:: [[[[]				
Casing dia	meter/type:	2"			Well location	on: Fra	ent at	Grocer	y	Weather:	Overest 80°
Screened	interval(s):	7.9	- 55		Sampling p	personnel:	W6-, 17	O	/		
Total dept	h:	35'			Sampling r	method: Low-fl	ow micropurge				
Initial dept	h to water (v	v/o pump):	22.93		Water leve	el indicator:	Geofer	h			
Final depth	n to water (w	ı/o pump):	75.78		Water qua	lity meter:	YSI				
Measuring point: North side of casing Pump depth setting: ~ 25 Pump type/model:											55 Monsoon
5 min	Δ < 10%	Δ < 10%			Δ < 0.1 pH		Δ < 0.3 ft	< 1L/min		< 0.5 L/min	Parameter Stabilization Limits (3 consecutive readings)
Time	Temp (°C)	Conductivity (mS/cm) or (µS/cm)	DO (%)	DO (mg/L)	рН	ORP (mV)	Water Level (feet btoc)	Flow Rate (L/min) or (mL/min)	Turbidity (NTU)	Purge Volume (L) or (mL)	Additional Comments
1049	27.0	2852	9.8	0.75	6.68	. 96.8	23.43	200	41.64		
1048	27.5	2793	3.8	0.30	6.48	-116.1	23.58	200	35.64		
1051	1.027.8	2784	3.7	0.28	6.94	-118.3	23.73	200	22.28		
1054	27.8	2783	3.5	0.27	6.47	-120.8	23.87	200	19.06		
1057	27.9	2772	3.2	0.25	6.50	- 124.4	23.89	200	1996		
1100	28.1	2756	2.9	0.23	6.51	-127.4	23.91	200	20.55		
1,100	7011	21/0	~ .	0.41	D./ t		4011	AUV	9011		
										1/4 gal	
										74 gal	
	-										
										-	
-											

Recorded By:	W. Canter

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91	13/17

Well ID:	MW	-02	Sample ID:	Mw.	02	Sample Time	1010				
Casing dia	meter/type:				Well location		hind Ma	rket		Weather:	Cools Overcast 79"
Screened i	nterval(s):	2.5	- 35		Sampling p	ersonnel:	Wo, AU				
Total depth	n:	35			Sampling r	nethod: Low-f	low micropurge				
Initial depth	n to water (v	w/o pump):	20.60		Water leve	l indicator: (Seotech				
Final depth	to water (v	v/o pump):	22.10		Water qua	ity meter:	YSI	1			77
Measuring	point: Nort	th side of casin	g		Pump dept	h setting:	-27.0).'	Pump type/m	odel:	53 Mongoun
5 min	Δ < 10%	Δ < 10%			Δ < 0.1 pH		Δ < 0.3 ft	< 1L/min		< 0.5 L/min	Parameter Stabilization Limits (3 consecutive readings)
Time	Temp (°C)	Conductivity (mS/cm) or (µS/cm)	DO (%)	DO (mg/L)	рН	ORP (mV)	Water Level (feet btoc)	Flow Rate (L/min) or (mL/min)	Turbidity (NTU)	Purge Volume (L) or (mL)	Additional Comments
6945	24.8	1207	16.4	1.03	7.15	-28.6	21.61	200	30.02		
0948	25.1	1206	4.6	0.37	6.88	-68.0	21.49	200	22.79		
3991	25.4	1206	3.8	0.31	6.88	-83.8	21.47	200	21.78		
0994	29.6	1211	3.8	0.31	6.88	-90.2	21.42	200	19.83		
0957	258	1214	3.6	0.29	6.88	-96.4	21,41	200	19.33		
1000	260	1218	3.3	0.27	6.89	-99.9	71.41	200	14.38		
										0.9gat	
										3.59al	
			N.								

	W. Canter	
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Well ID:	Mu	1-3	Sample ID:	Mw	-3	Sample Time					
Casing dia	meter/type:		2"		Well locati	on: Be	hind	Mehong		Weather:	Clear 86°
Screened i	nterval(s):	2.	5-35		Sampling	personnel:	WEIA	D			
Total depth	1:		35'		Sampling I	method: Low-flo	ow micropurge				
Initial depth	n to water (v	w/o pump): wy	2+10	19.23	Water leve	el indicator:	Geofech	1			
	to water (w		19,41		Water qua		YSI	-70		OC In	
Measuring	point: Nort	th side of casir	ng		Pump dep	th setting: 🤟		27.5	Pump type/m		onsoer
5 min	Δ < 10%	Δ < 10%			Δ < 0.1 pH		∆ < 0.3 ft	< 1L/min		< 0.5 L/min	Parameter Stabilization Limits (3 consecutive readings)
Time	Temp (°C)	Conductivity (mS/cm) or (µS/cm)	DO (%)	DO (mg/L)	рН	ORP (mV)	Water Level (feet btoc)	Flow Rate (L/min) or (mL/min)	Turbidity (NTU)	Purge Volume (L) or (mL)	Additional Comments
1255	24.9	1/19	12.4	0.95	7.34	82.7	19.90	290	57.21		
1298	24.1	1111	4.1	0.34	6.44	98.9	19.93	290	48.56		
1301	24.6	1106	3.5	0.30	6.48	90.7	19.50	200	40.82		
1304	25.2	1108	3.8	0.31	6.83	79.8	19.52	200	39.00		
1307	29.4	1106	3.8	0.31	6.67	71.6	19.49	200	40.76		
1310	25.2	1103	3.5	0.29	6.67	69.0	19.50	200	32.12		
1/10	.,,,	7107	, , ,			0.0				34 gal	
			1							7	
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Well ID:	Mh	, 4	Sample ID:	Mw-	4	Sample Time					
Casing dia	meter/type:	2"			Well locati		hind 10	Melong		Weather:	Clear 87°
Screened	interval(s):	2'-35			Sampling		16,110				
Total dept	h:	35	1000		Sampling I	method: Low-flo	2 1)			
Initial dept	h to water (v	w/o pump):	19-05		Water leve	el indicator:	Geotech				
Final depti	n to water (v	v/o pump):	41.33		Water qua	lity meter:	YSI				
Measuring	point: Nor	th side of casir	ng		Pump dep	th setting:	281		Pump type/m		onsoon
5 min	Δ < 10%	Δ < 10%			Δ < 0.1 pH		Δ < 0.3 ft	< 1L/min		< 0.5 L/min	Parameter Stabilization Limits (3 consecutive readings)
Time	Temp (°C)	Conductivity (mS/cm) or (µS/cm)	DO (%)	DO (mg/L)	рН	ORP (mV)	Water Level (feet btoc)	Flow Rate (L/min) or (mL/min)	Turbidity (NTU)	Purge Volume (L) or (mL)	Additional Comments
1410	23.5	1985	75.2	6.08	6.96	-25.4	20.15	250	37.49		
1413	23.5	1578	5,2	0.43	6.28	- 29.6	20.33	250	40.26		Water his strong
1416	23.8	1581	37	0.27	6.31	- 45.3	20.50	250	29.34		edar Bio?
1419	23.9	1587	2.1	0.18	6.41	-63.5	20.53	290	23.4		
1422	23.9	1588	1.9	0.15	6.45	-77.7	20.67	250	21.77		
1425	23.9	1586	1.7	0.14	6.46	-79.6	20.70	250	19.43		
114	7	1700	1. 2		0	7.0	70:10	270	10.1	3/4 eal	
					-		14			- 4746	
		7-4									
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Well ID:	Mw		Sample ID:	Ma	.5	Sample Time	1615				
Casing dia	meter/type:	2"			Well locati	on: Be	hidd M	elong		Weather:	Overcast 80°
Screened i	nterval(s):	2-3	5		Sampling p	personnel:	WG,	40			
Total depth	1:	39			Sampling r	nethod: Low-fl	ow micropurge				
Initial depth	n to water (v	v/o pump):	20.04		Water leve	I indicator:	3 eotech				
Final depth	to water (w	v/o pump):	20.95		Water qua	lity meter:	YSI				
Measuring	point: Nort	th side of casir	ng		Pump dep	th setting:	-28.	0	Pump type/mo		1.0.700
5 min	Δ < 10%	Δ < 10%			∆ < 0.1 pH		Δ < 0.3 ft	< 1L/min		< 0.5 L/min	Parameter Stabilization Limits (3 consecutive readings)
Time	Temp (°C)	Conductivity (mS/cm) or (µS/cm)	DO (%)	DO (mg/L)	pН	ORP (mV)	Water Level (feet btoc)	Flow Rate (L/min) or (mL/min)	Turbidity (NTU)	Purge Volume (L) or (mL)	Additional Comments
1950	24.4	1997	13.4	1.68	6.84	79.8	20.56	200	Fr 64.53		
1553	23.7	1937	9.6	0.81	6.29	93.0	20.80	200	58.34		
1556	24.1	1915	10.9	0.91	6.31	89.7	20.82	200	810 ad		
1959	24.1	1911	11.1	0.93	6.34	88.2	20.82	200	136 ou		
1602	24.1	1916	11.4	0.96	6.41	85.6	20.89	200	92.95		
1609	24.1	1936	10.5	0.88	6.44	83.7	20.85	200	79-12		
1007	70.1	1170	1011							3/4 gal	
										7,00	

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Well ID:	M		Sample ID:	Mw-	06	Sample Time	e: 1645				
Casing dia	meter/type:	7/1			Well location	ո:				Weather:	Jasm cleur 850
	nterval(s):	2 -	35		Sampling pe	ersonnel:	WG. AB				
Total depti	1:	35			Sampling m	ethod: Low-f	low micropurge	y I			
Initial depti	n to water (w/o pump):	31.2		Water level	indicator:	Geotech				
Final depth	to water (v	v/o pump):	33.7		Water qualit	y meter:	YSI				
Measuring	point: Nor	th side of casin	g		Pump depth	setting:			Pump type/m		
5 min	Δ < 10%	Δ < 10%			Δ < 0.1 pH	*	Δ < 0.3 ft	< 1L/min		< 0.5 L/min	Parameter Stabilization Limits (3 consecutive readings)
Time	Temp (°C)	Conductivity (mS/cm) or (µS/cm)	DO (%)	DO (mg/L)	рН	ORP (mV)	Water Level (feet btoc)	Flow Rate (L/min) or (mL/min)	Turbidity (NTU)	Purge Volume (L) or (mL)	Additional Comments
		Hand									
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Well ID:	Mu-	_	Sample ID:	My	-7	Sample Time	e: 1315				
Casing dia	meter/type:	2"			Well location	n:				Weather:	Warm Clear 85°
Screened	interval(s):	20	- 35		Sampling pe	ersonnel:	WE,	10			
Total dept	h:		35'		Sampling me	ethod: Low-f	low micropurge				
Initial dept	h to water (w/o pump): 🛮	16.73		Water level	indicator:	Geoter	h			
Final depti	n to water (v	v/o pump): 2	7.13		Water qualit	y meter:	YSI			66	A./
Measuring	point: Nor	th side of casin	g		Pump depth	setting:	32'		Pump type/m		Monsoon wg
5 min	Δ < 10%	Δ < 10%			Δ < 0.1 pH		Δ < 0.3 ft	< 1L/min		< 0.5 L/min	Parameter Stabilization Limits (3 consecutive readings)
Time	Temp (°C)	Conductivity (mS/cm) or (µS/cm)	DO (%)	DO (mg/L)	рН	ORP (mV)	Water Level (feet btoc)	Flow Rate (L/min) or (mL/min)	Turbidity (NTU)	Purge Volume (L) or (mL)	Additional Comments
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Well ID	Mu-	8	Sample ID:	Mw	- 8	Sample Tim	e: 0815] [
Casing dia	ameter/type:	Ē	2"		Well location	on: L	umber Yo	erd		Weather:	Cool, Overcast 73°
Screened	interval(s):		39.5		Sampling p	ersonnel:	wo,	AP			
Total dept	h:	36.			Sampling r	nethod: Low-f	low micropurge				
Initial dept	th to water (w/o pump):	17.61		Water leve	l indicator:	Geolee	h			
Final dept	h to water (v	v/o pump):	17.81		Water qua	ity meter:	YSI				
Measuring	point: Nor	th side of casir	ng		Pump dept	h setting:	26		Pump type/m	nodel: 55 mo	nsoon
5 min	Δ < 10%	Δ < 10%			Δ < 0.1 pH		Δ < 0.3 ft	< 1L/min		< 0.5 L/min	Parameter Stabilization Limits (3 consecutive readings)
Time	Temp (°C)	Conductivity (mS/cm) or (µS/cm)	DO (%)	DO (mg/L)	рН	ORP (mV)	Water Level (feet btoc)	Flow Rate (L/min) or (mL/min)	Turbidity (NTU)	Purge Volume (L) or (mL)	Additional Comments
159	23.5	1458	15.9	1.24	6.69	106.0	17.99	200	7144		
758	24.0	1498	4.2	0.35	6.83	91.3	17.87	200	60.29		
758 801 804	24.1	1458	4.1	0.34	6.84	87.8	17.83	200	48.93		
804	24.3	1459	3.7	0.31	6.84	86.5	17.83	200	42.86		
807	24.3	1459	4.5	0.37	6.82	87.1	17.82	200	40.44		
										0.9 galug	
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Well ID:	NW	-20	Sample ID:	Mw-	20	Sample Time	: 1345				
Casing dia	meter/type:	2"	1		Well locati	on: Peri	<i>y</i>	Cypress	Centre	Weather:	Overcast 88°
Screened i	nterval(s):	20-			Sampling	personnel:	WG,AL	3 "			
Total depth	1:	34'	19.0		Sampling i	method: Low-fl	ow micropurge				
Initial depth	to water (v	v/o pump):	25.58		Water leve	el indicator:	Geolech				
Final depth	to water (w	v/o pump):			Water qua	lity meter:	YSI				
Measuring	point: Nort	th side of casir	ng		Pump dep	th setting:	29'		Pump type/m	odel: 55	Monsoo
5 min	Δ < 10%	Δ < 10%			Δ < 0.1 pH		∆ < 0.3 ft	< 1L/min		< 0.5 L/min	Parameter Stabilization Limits (3 consecutive readings)
Time	Temp (°C)	Conductivity (mS/cm) or (µS/cm)	DO (%)	DO (mg/L)	рН	ORP (mV)	Water Level (feet btoc)	Flow Rate (L/min) or (mL/min)	Turbidity (NTU)	Purge Volume (L) or (mL)	Additional Comments
1325	28.2	2938	12.0	0.91	6.93	-60.8	26,23	200	1300 au		Water level 13
1328	29.0	2966	3.1	0.24	6.17	-55.0	26.04	200	150900		very low Pump wont
1331	29.3	2970	2.7	0.21	6.21	-60.6	26.05	200	733av		90 past 30'
1334	29.3	2975	2.7	0-21	6.26	-64.7	26.05	200	626ev		/ 1
1337	29.3	2984	2.6	0.19	6.32	-69.4	26.09	200	86-107	27.2	
1340	29.2	2989	2.2	0.17	6.34	-70.2	26.13	200	68.24		
1											
										3/4 gal	
										700	

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Well ID:	Ma	N-9	Sample ID:	Mw	-9	Sample Time	e: [400] [
Casing dia	meter/type:	211			Well location		ework Si	hack		Weather:	Clear 80°
Screened	interval(s):	20-35			Sampling p		WG, AB				
Total dept	h:	35'	1		Sampling n	nethod: Low-fl	low micropurge				
Initial dept	h to water (w/o pump):	22.1		Water leve	I indicator:	Geolech	1			
Final depth	n to water (v	v/o pump):	24.95		Water qual	ity meter:	YSI			20	l à
			Pump dept	h setting:	21	27 Pump type/model: \$5 Mansgers					
5 min	Δ < 10%	Δ < 10%			∆ < 0.1 pH		Δ < 0.3 ft	< 1L/min		< 0.5 L/min	Parameter Stabilization Limits (3 consecutive readings)
Time	Temp (°C)	Conductivity (mS/cm) or (µS/cm)	DO (%)	DO (mg/L)	рН	ORP (mV)	Water Level (feet btoc)	Flow Rate (L/min) or (mL/min)	Turbidity (NTU)	Purge Volume (L) or (mL)	Additional Comments
1738	24.6	1734	14.9	1.20	6.59	17.9	21.83	200	80.63		
1791	24.9	1722	12.5	101	6.38	22.7	23.34	200	156.0		
1744	26.1	1714	10.0	0.80	6.39	14.5	23.30	200	149.0		
1747	26.4	1721	8.8	0.70	6.43	-1,9	23,29	200	86.0		
1750	27.0	1705	7.7	0.61	6.63	-11.0	23.32	200	71.8		
1753	27.2	1688	77	0.57	6.65	-15.0	23.31	200	46.0		
1756	27.5	1674	6.8	0.53	6.66	-18.2	23.30	200	92.41		
11	41.7	107 1	0.0	0.77	0.00	1016	41.70	100	1, 5, 11	1/4 w9 39al	
1799										1/4 7904	
							+				

	W. Canter
Recorded By:	W. Gavere

Sheet _	of
Date:	
	9/13/17

Well ID:	Mu	-21	Sample ID	: Mw-	2)	Sample Time					
Casing dia	meter/type:	2"			Well location	on: Pel	- Groomin	g Phin	g Lot	Weather: (Overcust Breazy 89°
Screened	interval(s):				Sampling p		WG, AB				
Total dept	n:	29	1.73		Sampling r	nethod: Low-fl	ow micropurge	1			
Initial dept	h to water (v	w/o pump):	24.78		Water leve	l indicator: (Stotech				
Final depth	n to water (v	v/o pump):	25.01		Water qua		YSI				
Measuring	point: Nor	th side of casir	ng		Pump dept	h setting: 2	7'		Pump type/m	odel: 55 N	lonsoon
5 min	Δ < 10%	Δ < 10%			Δ < 0.1 pH		∆ < 0.3 ft	< 1L/min		< 0.5 L/min	Parameter Stabilization Limits (3 consecutive readings)
Time	Temp (°C)	Conductivity (mS/cm) or (µS/cm)	DO (%)	DO (mg/L)	рН	ORP (mV)	Water Level (feet btoc)	Flow Rate (L/min) or (mL/min)	Turbidity (NTU)	Purge Volume (L) or (mL)	Additional Comments
1453	27.3	1992	32.7	2.44	6.39	26.5	25.07	200	49.75		
1456	28.1	1973	4.4	0,34	6.23	29.6	25.03	200	39.90		
1459	28.4	1877	3.7	0.28	6,27	309	29.03	200	33.10		
1502	28.5	1853	3.3	0.25	6.30	30.9	25.03	200	25.44		
1505	28.6	1836	2.7	0.21	6.37	30.6	25.05	200	19,24		
1508	28.6	1837	2.5	0.19	6.39	30.1	29.06	200	12.28	3gal	
			0								1.
				_							

Recorded By:	1 . Canter
necoraca by	

Sheet	of	
Date:		
	1/12	717

Well ID:	My.	77	Sample ID	· Mw	22	Sample Time	: 1120				
Casing dia	meter/type:	2"			Well locati	on: Cyp	ress Ce	utre		Weather: /	Tear 82°
Screened i	nterval(s):	48-9	3		Sampling	personnel:	WE	AB			
Total depth	n:				Sampling	method: Low-fl	ow micropurge				
nitial depth	to water (v		44.23		Water leve	el indicator:	Geofec	h			
inal depth	to water (w	v/o pump):	15.87		Water qua	lity meter:	YSI				
Measuring	point: Nort	th side of casir	ng		Pump dep	th setting:	51'		Pump type/m		Mousoon
5 min	Δ < 10%	Δ < 10%			Δ < 0.1 pH		Δ < 0.3 ft	< 1L/min		< 0.5 L/min	Parameter Stabilization Limits (3 consecutive readings)
Time	Temp (°C)	Conductivity (mS/cm) or (µS/cm)	DO (%)	DO (mg/L)	рН	ORP (mV)	Water Level (feet btoc)	Flow Rate (L/min) or (mL/min)	Turbidity (NTU)	Purge Volume (L) or (mL)	Additional Comments
1100	25.9	2927	34.1	2.34	6.49	26.5	45.27	200	18.00		
1103	25.8	2941	8.1	0.64	6.24	9.7	45.05	200	91.0.		
1106	29.8	1848	4,9	0-39	6.21	-0.5	44.96	200	61300 E	136	
1104	26.1	2807	4.)	0.33	6.25	-6.8	44.98	220	97	7.0	
1117	26.3	2792	3.9	0.31	6.34	-15.7	44,96	260	38.0		
1115	21.6	2787	3.5	0.28	6.38	-20.8	44.96	200	76.71		
	76.0							7,0	70.1		
										~ 3941	
										1/4/	
							-				
				-							
									1		
										-	

1	1 Contact	
1	J. bante	

Recorded By:_

of
9/20 67

Well ID:	My.	-23	Sample ID:	Mw-	23	Sample Tim	e: 0990				
Casing dia	meter/type:	2"			Well location	on:				Weather:	Clear 80°
Screened	ened interval(s): 48 - 53 Sampling personnel: UG										
Total depti		55	T 6.5				low micropurge				
	n to water (v	w/o pump):	43.67		Water leve	771	Geofect				
Final depth	n to water (v	v/o pump):	49.21		Water qual		YSI				
Measuring	point: Nor	th side of casir	ng		Pump depth setting: 51' Pump type/model: Mon size ?						หรอยา
5 min	Δ < 10%	Δ < 10%			Δ < 0.1 pH		Δ < 0.3 ft	< 1∐min		< 0.5 L/min	Parameter Stabilization Limits (3 consecutive readings)
Time	Temp (°C)	Conductivity (mS/cm) or (µS/cm)	DO (%)	DO (mg/L)	рН	ORP (mV)	Water Level (feet btoc)	Flow Rate (L/min) or (mL/min)	Turbidity (NTU)	Purge Volume (L) or (mL)	Additional Comments
0935	27.2	1167	22.4	1.75	7.12	57.8	46.25	300	60.08		
0938	25.1	1168	12.5	1.02	7.08	49.0	46.27	250	54.35		
6941	25.4	1173	10.9	0.88	7.05	43.2	46.41	250	85,53		
0938 0941 0944	25.6	1109	8.3	0.67	7.05	34.6	45.91	250	147.0		
0947	26.0	1194	8.7	0.70	7.04	28.5	45.51	7.50	678.0		
		1000	-0-1	10			1.7.	uese		Zoal	
									U.II	1	
			\$ 1								
				44							

	1 Cartour
Recorded By:	W. Garter

Sheet	of
Date:	9/12/17

Well ID:	Mr	-24	Sample ID	· Mw-	24		e: 0855			[
Casing dia	meter/type:				Well location	on: Oki		-		Weather:	Clear 79°
Screened	nterval(s):	48-	53		Sampling p	ersonnel:	W6, 16)			
Total depti	n:	59			Sampling n	nethod: Low-t	low micropurge				
Initial dept	n to water (w/o pump):	7.44		Water leve	I indicator:	Georech				
Final depth	to water (v	v/o pump): 5	1.98		Water qual	ity meter:	YSI			od	1.
Measuring		th side of casir	ng		Pump dept	h setting:	51'		Pump type/m		Mon 306 n
5 min	Δ < 10%	Δ < 10%			Δ < 0.1 pH		∆ < 0.3 ft	< 1L/min		< 0.5 L/min	Parameter Stabilization Limits (3 consecutive readings)
Time	Temp (°C)	Conductivity (mS/cm) or (µS/cm)	DO (%)	DO (mg/L)	рН	ORP (mV)	Water Level (feet btoc)	Flow Rate (L/min) or (mL/min)	Turbidity (NTU)	Purge Volume (L) or (mL)	Additional Comments
825	25.2	1051	9.1	0.65	7.39	13.7	21.76	200	41.61		
828	75.5	1030	6.2	6.50	7.32	4.9	23,45	200	36.24		
831	29.8	1034	6.2	0.50	7.30	0.1	24.09	250	39.87		
834	25.8	1026	4.6	0.45	7.30	-1.8	24.94	250	34.53		
837	26.1	1017	9.7	0.46	7.50	- 2.6	29.77	200	31.85		
840	26.1	1009	5.2	0.90	7.30	-1.1	26.60	290	30.21		
843	26.1	989	6.8	0.95	7.31	2.3	27.3	250	30.43		
946	7/1	looi	6.8	0.57	7.30	7.1	27.17	290)	30.32		
946 849	26.1	1003	5.4	0.48	7.30	-1.8	28.60	750	29.8		
892	25.8	933	9.6	0.59	7.32	10.0	29.7	290	27.2		
0/4	2/10	177	(10)	0.71	11.76	10:0	X /	-10	27.6	4gal	
										1700	
				1							
					Also and a						

Recorded By:	W Ginter	

Sheet	of ,
Date:	9/11/17

Well ID:	Mu			1		Sample Time				l I	0.6			
Casing dia	meter/type:	211			Well location	n:				Weather:	Clear 85°			
Screened i	nterval(s):		23-28		Sampling pe	Sampling personnel: WG AB								
Total depth):		30		Sampling method: Low-flow micropurge									
Initial depti	n to water (v	w/o pump):	29.93		Water level indicator:									
Final depth	to water (v	v/o pump):	29.53		Water quality meter: YSI									
Measuring	point: Nor	th side of casin	ıg		Pump depth	setting:			Pump type/m					
5 min	Δ < 10%	Δ < 10%			Δ < 0.1 pH		∆ < 0.3 ft	< 1L/min		< 0.5 L/min	Parameter Stabilization Limits (3 consecutive readings)			
Time	Temp (°C)	Conductivity (mS/cm) or (µS/cm)	DO (%)	DO (mg/L)	рН	ORP (mV)	Water Level (feet btoc)	Flow Rate (L/min) or (mL/min)	Turbidity (NTU)	Purge Volume (L) or (mL)	Additional Comments			
											No Sample			
											NO TOWNE			
							la l							

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ATTACHMENT D VISTA GEOSCIENCE INJECTION REPORT



Expert Environmental Support Services for Site Investigation & Remediation

April 17, 2018

Patrick Appel

EA Engineering 400 State Highway 121 Bypass, Building C, Suite 100, Lewisville, TX 75067-8192 Via E-Mail: pappel@eaest.com

RE: Vista Project #18035.01; Application of Peroxychem EHC-L at 11529 Jones Road, Houston, TX

Dear John:

Attached is our summary of the injection event that was completed at the site referenced above. Feel free to contact us if you have any questions. We look forward to working with you again soon.

Sincerely,

Peter Wethington Environmental Geologist Vista Geoscience

Reviewed by:

Jeffrey Zajdel Field Operations Manager Vista Geoscience



Vista GeoScience Project No: 18035.01

Application of Peroxychem ECH-L for the In-Situ Remediation of Chlorinated Solvents at: 11529 Jones Road, Houston, TX



Prepared for: **EA Engineering, Science, and Technology**



April 17, 2018

Table of Contents

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5

SITE HISTORY AND OVERVIEW 1

A location within the strip mall at 11529 Jones Road was previously a dry cleaner that had historically released chlorinated solvents into the ground. With a successful round of injections in 2016, Vista Geoscience was asked to return for a small second round of injections. A total of ten proposed locations were to be injected at; six in the western area of the shopping center and four in a grassy patch southwest of the shopping center. Both areas had different mix designs prepared by Peroxychem and EA Engineering. Mixing instructions can be found in section 4 of this document.

PRE-INJECTION ACTIVITIES

On March 21, 2018 Vista Geoscience (Vista) mobilized a Clean Inject injection trailer and a Geoprobe brand 7822DT direct push/auger combination track rig complete with Geoprobe brand injection tooling to 11529 Jones Road, Houston, TX. Upon arrival, Vista began setting up the site. This included site arrangement, receiving product shipments, equipment rentals, and coning off the work area. A security fence was also installed as the primary form of traffic control and safety for the duration of work activities. The installed fencing surrounded both injection areas, all equipment, and chemicals onsite. On Monday March 26, 2018, the site was set up and injections were ready to commence, however, there were delivery issues with the hydrant meter which moved the start of injections to the following day.

3 **INJECTION EVENT**

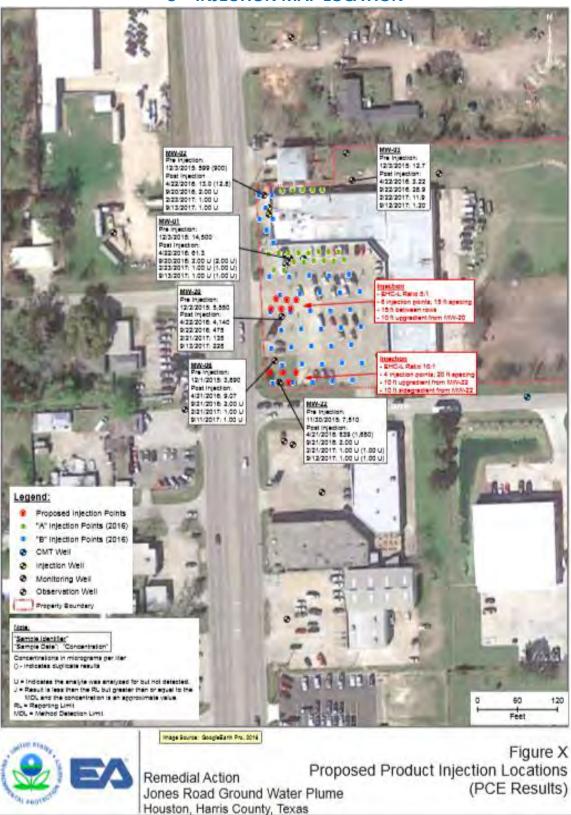
On March 27, 2018, Injections commenced. Injection tooling included one-and-a-half-inch probe rod with a four-foot retractable injection tool with a v-wrapped screen for injections. A total of six injection locations were completed in the western area of the parking lot on the first day with no surfacing. Each location was pushed to 32 feet below ground surface (bgs) and then pulled up to 28 feet to expose the injection screen. A custom injection manifold was built for this project to accommodate injecting at up to four injection locations at a time. Three injection locations were injected into at a time in the first area west of the shopping center. Each location varied in its flowrates and injection pressures. Vista attempted to keep injection pressures below 60-70 psi to allow the product to flow into the formation without displacing the water table. On March 28, 2017, four injection locations were completed in the south west area of the shopping center. All four injection locations were injected into at the same time with varying flow rates at each location. Injection pressures in this area were overall a bit higher and thus flow rates were affected. All injection pressures and flow rates can be found in section 6 of this document. Upon completion of injections, Vista cleaned up the site and packed all equipment. On March 29, 2018 the fencing company that created the exclusion zone informed Vista they would not be able to take down the fence until the following day. Vista broke down most of the fencing in the parking lot area into a neat pile to create more space in the lot before mobilizing off site.

In total, 15 drums of ELS were used along with 15 bags of EHC-L dry mix weighing 25 pounds each. Additionally, 550 pounds of supplemental sodium bicarbonate was used to create the injectate along with just over 3,600 gallons of mix water.

4 INJECTATE MIXING INSTRUCTIONS

Point	Top ft bgs	Bottom ft bgs	Water	ELS (Drums)	EHC-L (lbs)	KHCO3 (lbs)	Total Volume Injection (gal)
P-01	28	32	679	1.5	37.5	62.5	754
P-02	28	32	679	1.5	37.5	62.5	754
P-03	28	32	679	1.5	37.5	62.5	754
P-04	28	32	679	1.5	37.5	62.5	754
P-05	28	32	302	1.5	37.5	50	377
P-06	28	32	302	1.5	37.5	50	377
P-07	28	32	302	1.5	37.5	50	377
P-08	28	32	302	1.5	37.5	50	377
P-09	28	32	302	1.5	37.5	50	377
P-10	28	32	302	1.5	37.5	50	377

5 INJECTION MAP LOCATION



6 INJECTION LOGS

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Injection Log

Project No.:			18035.01								ELS			Inj. Tool:	3	Date:	3/27/2018
Client:			EA Engineer								EHC-L			Inj. Rig:	VGS-45 Flatbed 3-Axle 18,000 GVW (Trailer - 5th		, , , , ,
								Injected		C.	odium Biarbonat			-			
Site Address:		11529	Jones Rd, Ho	ouston, TX				Products:		30	odium Biarbonai	.e		Drill Rig:	VGS-38 7822DT Geoprobe	Crew	JZ AG PW TS
														Drill Rig:	•	7	
						Sodium											
Injection	Start Time En	nd Time:	Interval (Ft.	ELS (Drums)	EHC-L (lbs)	Bicarbonate				Mixed H2O		Avg PSI	Avg. Flow		Notes/Comments:		Flow & pressure Graphs
location ID			BGS)	,		(lbs)				(gal)	Injected (gal)		Rate (gpm)				
IP-07	10:08		28-32	1.5	37.5	50				302							
IF -07	10:30	-	20-32	1.5	37.3	30				302	66	45	8				
	11:00										282	50	8.5				
	11:10										377	50	8.5				
				1.5	37.5	50	0	0	0	302							
IP-06	10:08		28-32	1.5	37.5	50				302							
	10:30										18	45	1				
	11:00										100	50	3.9				
	11:15										192	60	6.35				
	11:30										276 334	45	5 5.35				
	11:39 11:47										334	45 48	5.35				
	11.77			1.5	37.5	50	0	0	0	302	3/6	40	J.10				
IP-05	10:08		28-32	1.5	37.5	50				302							
00	10:30				27.0						50	45	6				
	11:00										93	50	1				
	11:15										108.5	60	0.78				
	11:30										117	45	0.55				
	11:40										121.35	47	0.26				
	11:50										125.5	60	0.56				
	12:11										144.9	70	0.4				
	12:25 12:40										150.5	65	1.15 0.66				
	14:00										162 231.1	75 65	0.66				
	15:10	-									274.8	160	1.51				
	15:23										303.42	160	1.78				
	15:33										319.92	155	1.59				
	15:48										330.12	100	0.48				
											379			Al	R DIAPHRAGM PUMP THE REMAINING VOL FROM MIXING	TANK	
				1.5	37.5	50	0	0	0	302							
IP-08	11:30		28-32	1.5	37.5	50					0	45	3.9				
	11:38										52.25	46	5.98				
	11:50 12:00										134.5	60	9.15 8.65				
	12:10										220 297.5	65 75	3.1	DE	DUCED PUMP HZ TO PREVENT OVER-PRESSURE (RATE DEC	DEVCE)	
	12:26										319.5	70	1.5	INE	DOCED FORM THE FOTREVENT OVER TRESSORE (MATE DEC	NEASE)	
	12:40										327	75	0.45				
	12:50										334.6	90	1.1				
	13:00										344.75	100	0.92				
	13:10										355	100	0.96				
	13:21								1		365.79	100	0.86	1			
	13:30			4.5	27.5	F0		0	_	0	377	100	1.1				
IP-09	12:12		28-32	1.5 1.5	37.5 37.5	50 50	0	0	0	0	5	60	5				
IF:-U7	12:12	+	20-32	1.0	37.0	30					95.5	70	6.14	-			
	12:40	+					-				150	75	3.4				
	12:50	+									184.01	90	3.55				
	13:00										219.8	100	3.32				
	13:10										260.6	100	1.2				
	13:22										302.2	100	4.23				
	13:30										333.7	105	3.4				
	13:40								1		361.9	100	2.67	-			
	13:48			1.5	27.5	F0	0	0		0	377	100	3.18	<u> </u>			
IP-10	14:00		28-32	1.5 1.5	37.5 37.5	50 50	0	0	0	0	12.08	65	7.92				
IF-IU	14:00	+	Z0-3Z	1.0	31.3	30					12.08	60	6.79				
	14:23	+									199.05	57	8.65				
	14:30										273.15	65	10.38				
	14:41										377	70	8.45				
				1.5	37.5	50	0	0	0	0							
6			0	9.00	225.00	300.00	0.00	0.00	0.00	906.00	0.00	74.76	3.691				

Injection Log

Project No.:			18035.01	1							ELS			Inj. Tool:	2	Date:	3/28/2018
Client:			EA Engineer								EHC-L			Ini Rig: VGS-45 Fla	tbed 3-Axle 18,000 GVW (Trailer - 5th Wheel,		3/23/2323
								Injected			dium Bicarbona	+-			VCC 20 7022DT C	_	
Site Address:		1152	9 Jones Rd, H	ouston, TX				Products:		30	dium bicarbona	ite		Drill Rig:	VGS-38 /822D1 Geoprobe	Crew	AG PW TS
														Drill Rig:	3		
						Sodium											
Injection location ID	Start Time	End Time:	Interval (Ft. BGS)	ELS (Drums)	EHC-L (lbs)	Bicarbonate (Ibs)				Mixed H2O (gal)	Cumulative Injected (gal)	Avg PSI	Avg. Flow Rate (gpm)		Notes/Comments:		Flow & pressure Graphs
IP-01	8:09		28-32	1.5	37.5	62.5				679	0	25	0				
	8:22										12.4	37	5.6				
	8:33										65.08		4.38				
	8:41										88.66		5.46				
	9:10 9:30										110.3 133	46	6.39 6.65				
	9:40										212.6	48	7.01				
	9:46										282	75	9.13				
	10:02										363	75	5.45				
	10:27										412	22	5.12				
	10:40										475	25	4.6				
	10:56										548	55	4.6				
	11:10 11:20										603 680	45 50	8.55 8.01				
	11:20						 		1		755	50	8.01				
	11.50			1.5	37.5	62.5	0	0	0	679	, , , ,	30		<u> </u>			
IP-02	8:10		28-32	1.5	37.5	62.5			Ĭ	679	5.9	30	0				
	8:23						<u></u>				14.5	45	4.84				
	8:34										55.96		3.72				
	8:40										72.05	1	6.78				
	9:10										92.8		6.41				
	9:31						-				118.99	60	6.57				
	9:40 9:46										191.01 257	50 70	7.32 9.8				
	10:03										350	70	6.32				
	10:28						1				410	65	8.38				
	10:41										500	55	7.85				
	10:56										598	65	7.65				
	11:10										675	65	6.98				
	11:20										754	58	6.02				
				1.5	37.5	62.5	0	0	0	679			_	ı			
IP-03	8:11		28-32	1.5	37.5	62.5	1			679	7.47	26	0				
	8:23 8:34										20.5 56.12	37	5.03 4.88				
	8:41										75.56		1.38				
	9:10						1				96.5		5.12				
	9:31										123.01	50	7.16				
	9:41										184	70	4.96				
	9:46										196.2	75	1.82				
	10:03										213	65	1.5				
	10:29 10:57						-				255	70	1.16				
	11:10										261 267	75 50	0.46 0.7				
	11:20										275	45	2.33				
	11:30						1				305	70	2.95				
	11:45			<u> </u>						<u> </u>	336	65	4.05				
	12:00										396.9	68	5.55				
	12:15										481.2	70	5.39				
	12:35						ļI		-		567.1	75	6.07				
	12:47	 					 		 		687.6 757	75 70	6.45 4.35				
				1.5	37.5	62.5	0	0	0	679	/5/	/0	4.35	<u> </u>			
IP-04	8:11		28-32	1.5	37.5	62.5	3	3	U	679	0.91	28	0	<u> </u>			
	8:23						†				19.8	40	4.86				
	8:34										52.8		3.69				
	8:41										66.08		4.88				
	9:10										77.8		6.5				
	9:31						ļ		-		112	58	7.25	ļ			
-	9:41						 		1		169	70	4.06				
—	9:46 10:04			-	 		 		-		183 197.5	80 90	1.52 1.5				
	10:04						 		 		205	85	1.12				
	10:58			1			† †				216	85	0.71				1
	11:10						†				227	90	0.75				
	11:20										238	85	2.24				
	11:30										274	90	4.71				
	11:45										323.05	90	4.89			-	
	12:00			1			ļ		1		404	95	4.8				
-	12:15										477.2	90	5				
	12:35	 					 		1		556.2 648.88	89	4.68 6.01				
1	12:55						 		 		765	92 95	7.37	COMPLET	TE - SYSTEM / TANK FRESH WATER FLUSH STARTE	D	
				1.5	37.5	62.5	0	0	0	679	703	,,,	1.31	201411 EE1	TILLING		
4			0	6.00	150.00	250.00	0.00	0.00	0.00	2716.00	0.00	63.0526	4.71652174				

7 FIELD NOTES

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PROJECT INFORMATION	VISTA Project#	18035.0	DATE -26-14	RIG: 7730				
Vista Field Engineers: \\ \(\frac{15.46}{12}. \)			ate Ticket Number:	100				
Client: EA Engineering		Site Manag	ger: Jahn					
Client Project Name.		Client Proj	ect Number:					
Site Description: Parking Lot		Site Addre	ss: 11529 Jo	rs Rd				
DAILY TIME REPORT	(use 24-hour clock	Time Exceeded 4 Hr Min: YES)/ NO						
Day Number:	Total Hours on Sit	e: 8		Mobilization Mileage:				
Time Requested on Location: 73	Client's Standby H	lours:		To Site: 5				
Time on Location: 730	- Vista's Standby	Hours:		Return: 5				
Time off Location: 1530	- Lunch / Break H	ours:		Total: //>				
Lunch Break - From: To: —	= Total Bill Hours	@ Level: [1:4	Drive Hours: 5				
Standby Sessions (describe):			10					
EXPENDABLES USED AND DAM	IAGED TOOLS	(circle or	fill in bracketed ite	ms)				
	EM	QTY		ITEM				
LINERS/TUBING			ONMENT MATE	RIALS				
]' Soil Core Liners (ea)	Type:			ar], [Chip], [Powder] (50# bag)				
[]' Soil Core Liners (ea)			Silica Sand (50# b					
Other Liners:[1		Portland Cement (
[1/4"] , [3/8"] or [1/2"] Polyethy	vlene Tubing (ft)		[Asphalt Patch], [C					
3/8" Silicone Tubing (ft)	, ionio (ionio)	THE REAL						
Other Tubing:[119				
EXPENDABLES/PVC		RENTAL	EQUIPMENT/C	ONTRACT:				
/[]" Expendable Points	(ea):	1	Pump: [tas					
	expendable Cutting Shoe] (circle)		[PID/OVM] or [Lan					
[]" x 5' PVC Riser (sec				twork / CO Monitor				
[]" x 10' PVC Riser (se		C BA	Subcontracted Concrete Coring / Barricading					
[]" x 5' PVC Screen (se		3.0	3.25" Casing and					
]" x 10' PVC Screen (s			[Decon] or [Suppo	The second secon				
j" TFJ PVC Plug/Cap			Gamma Logger					
[]" PVC Slip Cap (ea)		Enan	Core Drill: []" x	[]"×[]"				
		4	Generator					
SUPPLIES								
/[]" J-Plug and Lock (se	et)							
[]" x []' Prepack	ed Screen (ea)	Additio	nal Items Used	/ Damaged Tools / PPE:				
Flush-Mount Traffic Cover ["] Diameter			A THE REAL PROPERTY.				
4" x 4" x 5' Sq. Steel Protect	tive Well Cover/Riser							
Concrete Anchor Bolts								
[30] or [55] gallon Drum, each	n		A CONTRACT OF					
			THE COLUMN					
APPROVALS & SIGNATURES			1175	-BOTA Dry				
Vista Field Engineer: Led Stacker	rult >	Client's S	upervisor:					
Parameter and the second secon		ue to		Samples Returned to Vista Lab				
NOTES: No goints	miter a	ue to		Campies Notarries to Vista East				
ODE DOT footomal	todal Factored III 000 /	Lunay Esstant	it nobe an w	ell Material Footage:[']				
OPS DPT footage:		Auger Footage	rilled Ft: Well F					
#Total Test Holes: #Cores: H20	Samples: Gamma Log Ft			The second secon				
VISIA GEOSCIENCE • 130 Capital Drive.	Suite C. • Golden, CO 80401.	-7074 0 (30)3	1 / / / - I D 94 • e-mail	i. iiiiilartiii(wvistadeostierice.com				

PROJEC	T INFORMATION	VISTA Project#	#: 18035.0	DATE: 3-27-	18 RIG:7736				
Vista Field	Engineers: 75, A(2, 12, Ph	1		ate Ticket Numbe					
Client:	EA Engineering		Site Manager: John						
	ect Name:		Client Project Number:						
Site Descr			Site Addre	ss: 11529	Jones Rd				
DAILY T	IME REPORT	(use 24-hour clos	ck) Time Exceeded 4 Hr Min: YESY, NO						
Day Numb	per: 1.	Total Hours on S	ite: //		Mobilization Mileage:				
	uested on Location:	Client's Standby	Hours:		To Site: 5				
	ocation: 300	- Vista's Standby	Hours:		Return: 5				
Time off L		- Lunch / Break h	Hours:		Total: /D				
	ak - From: To:	= Total Bill Hours	@ Level: [1)]: //	Drive Hours: 5				
Standby 8	Sessions (describe):								
EXDENI	DABLES USED AND DAMAGED	TOOLS	(circle or	fill in bracketed its	ems)				
QTY	ITEM	10020	QTY		İTEM				
	/TUBING		A STATE OF THE PARTY OF THE PAR	ONMENT MATE					
LINERS	Soil Core Liners (ea) Type:		Z		ar] [Chip], [Powder] (50# bag)				
-	[]' Soil Core Liners (ea) Type:		-	Silica Sand (50#					
-	Other Liners:[1		Portland Cement					
-	[1/4"] , [3/8"] or [1/2"] Polyethylene Tu	hing (ft)	/	[Asphalt Patch], [
/	3/8" Silicone Tubing (ft)	omg (it)							
/	Other Tubing:[1		-61-61					
EXPENI	DABLES/PVC		RENTAL	EQUIPMENT/	CONTRACT:				
/	.[[.5]" Expendable Points (ea):		1	Pump: [to					
-	[]" [Grip Anchor Point] or [Expendable	Cutting Shoel (circle)		[PID/OVM] or [La					
1	[]" x 5' PVC Riser (section) Sch				ctwork / CO Monitor				
	[]" x 10' PVC Riser (section) So			Subcontracted Co	oncrete Coring / Barricading				
1	[]" x 5' PVC Screen (section) S			3.25" Casing and	Auger Add-On				
/	[]" x 10' PVC Screen (section)			[Decon] or [Supp	ort] Trailer / Truck				
	[]" TFJ PVC Plug/Cap (ea)			Gamma Logger					
	[]" PVC Slip Cap (ea)			Core Drill: []" >	<[]"×[]"				
				Generator					
SUPPLI	ĘS								
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	[]" x []' Prepacked Scree	en (ea)	Additio	nal Items Used	/ Damaged Tools / PPE:				
	Flush-Mount Traffic Cover ["] Dia								
	4" x 4" x 5' Sq. Steel Protective Well	Cover/Riser							
/	Concrete Anchor Bolts								
	[30] or [55] gallon Drum, each								
APPRO	VALS & SIGNATURES			10.	The MAISON				
Vista Field	d Engineer:	will	Client's S	upervisor:	T DOWN LINE				
NOTES	. D. L PEID	3 4/1			Samples Returned to Vista Lab				
NOTES	: Paints P5-10 +	Inished			Campies retained to viola Lab				
-									
OPS DPT	footage:['] OPS 1" Well Material Fo	otome! I one	Auger Footage	1 "1 OPS 2" W	/ell Material Footage:[']				
#Total Test					en material i cottage [1				
	oScience • 130 Capital Drive, Suite C								
vista Gei	oscience • 130 Capital Drive, Suite C	Golden, CO 80403	1-2024 • (303)	2//-1094 • E-ma	ii. iiiiiai tiii@vistageostielite.toili				

PROJECT INFORMATION	VISTA Project#	: 1803501	DATE: 7	A RIG: 78				
Vista Field Engineers: Peyer (W. Ted J, 7	tonylo	Utility Loca	ate Ticket Numbe	r:				
Client: FA	70	Site Manag	er: Jahr A	ONNU-				
Client Project Name:		Client Project Number:						
Site Description: My Cleaner Banking	hot	Site Addres	ss: 11529_	lones Road				
DAILY TIME REPORT	(use 24-hour cloc	THE RESERVE OF THE PERSON NAMED IN COLUMN 1	Ti	me Exceeded 4 Hr Min: (ÉS)NO				
Day Number: 2	Total Hours on Si	te: //. 25		Mobilization Mileage:				
Time Requested on Location: 0750 CC45	Client's Standby I			To Site:				
Time on Location: Octob O645	 Vista's Standby 			Return:				
Time off Location: 1200	- Lunch / Break H		1130	Total: /&				
Lunch Break - From: To: —	= Total Bill Hours	@ Level: [4)]: 11.25	Drive Hours: -,5				
Standby Sessions (describe): /								
EXPENDABLES USED AND DAMAGED	TOOLS	(circle or f	ill in bracketed ite					
QTY ITEM		QTY		ITEM				
LINERS/TUBING		ABANDO	NMENT MATE	RIALS				
[]' Soil Core Liners (ea) Type:		2	Bentonite (Sfanu	làr}[Chip], [Powder] (50# bag)				
[]' Soil Core Liners (ea) Type:			Silica Sand (50#	bag)				
Other Liners:[]		Portland Cement					
[1/4"] , [3/8"] or [1/2"] Polyethylene Tub	ing (ft)	-	[Asphalt Patch]	Concrete] (SOIb. bag)				
3/8" Silicone Tubing (ft)								
Other Tubing:[]							
EXPENDABLES/PVC		RENTAL	EQUIPMENT/	CONTRACT:				
[1,5]" Expendable Points (ea):			Pump: [
[]" [Grip Anchor Point] or [Expendable	Cutting Shoe] (circle)		[PID/OVM] or [La					
[]" x 5' PVC Riser (section) Sch	[]		Exhaust Fan / Du	actwork / CO Monitor				
[]" x 10' PVC Riser (section) Sch	n[]		Subcontracted Concrete Coring / Barricading					
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[]" x 10' PVC Screen (section) S	Sch []		[Decon] or [Support] Trailer / Truck					
[]" TFJ PVC Plug/Cap (ea)			Gamma Logger					
[]" PVC Slip Cap (ea)			Core Drill: []" x []" x []"					
A CHARLES		J	Generator +ruiter manta)					
SUPPLIES								
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[]" x []' Prepacked Screen		Additio		I / Damaged Tools / PPE:				
Flush-Mount Traffic Cover ["] Dian			White tri					
4" x 4" x 5' Sq. Steel Protective Well	Cover/Riser			MA				
Concrete Anchor Bolts			Fence rend	اما				
[30] or [55] gallon Drum, each								
APPROVALS & SIGNATURES			110	The 151 570				
Vista Field Engineer:		Client's Su	pervisor:	1 180 101				
NOTES:			-0	Samples Returned to Vista Lab				
INECT IPOL, 02,03,04								
2001 1000								
OPS DPT footage:['] OPS 1" Well Material Foo	tage:['1 OPS	Auger Footage:	7 OPS 2" W	/ell Material Footage:[']				
#Total Test Holes:[] #Cores:[] H2O Samples:[] Gamma Log Ft							
Vista GeoScience • 130 Capital Drive, Suite C •								

PROJECT INFORMATION			DATE: 3/29/1	8 RIG:7822 DT			
Vista Field Engineers: DW, TS, AG		THE RESERVE OF THE PERSON NAMED IN	te Ticket Number:				
			er: John Box				
Client: FA engineering Client Project Name:		Client Proje	ct Number:	P.R.A.			
Site Description: Perking Lots				nes 2D			
	/ - 04 b			Exceeded 4 Hr Min: (YES) / NO			
DAILY TIME REPORT	(use 24-hour clock		Time	Mobilization Mileage:			
Day Number: 4	Total Hours on Site			To Site:			
Time Requested on Location 07-00	Client's Standby H			Return:			
Time on Location: 0700	- Vista's Standby F			Total:			
Time off Location: 61 00	 Lunch / Break Ho Total Bill Hours (1: 4	Drive Hours:			
Lunch Break - From: To:	= Total Bill Hours (n Level.	1. 7	Drive Flours.			
Standby Sessions (describe):							
EXPENDABLES USED AND DAMAGED T	OOLS	(circle or f	III in bracketed item				
QTY ITEM		QTY		ITEM			
LINERS/TUBING		ABANDO	NMENT MATER				
[]' Soil Core Liners (ea) Type:		/	Bentonite [Granular]], [Chip], [Powder] (50# bag)			
/ []' Soil Core Liners (ea) Type:			Silica Sand (50# ba	g)			
Other Liners:[]		Portland Cement (9	4# bag)			
[1/4"] , [3/8"] or [1/2"] Polyethylene Tubi	ng (ft)		[Asphalt Patch], [Co	ncrete] (lb. bag)			
3/8" Silicone Tubing (ft)							
Other Tubing:[J						
EXPENDABLES/PVC		RENTAL	EQUIPMENT/CO	ONTRACT:			
[]" Expendable Points (ea):			Pump: [
[]" [Grip Anchor Point] or [Expendable C	cutting Shoe] (circle)		[PID/OVM] or [Land				
[]" x 5' PVC Riser (section) Sch [1	/ Exhaust Fan / Ductwork / CO Monitor					
[]" x 10' PVC Riser (section) Sch	[]	Subcontracted Concrete Coring / Barricading					
[]" x 5' PVC Screen (section) Sch			3.25" Casing and A				
[]" x 10' PVC Screen (section) Sc	ch []		[Decon] or [Support	Trailer / Truck			
[]" TFJ PVC Plug/Cap (ea)			Gamma Logger				
[]" PVC Slip Cap (ea)			Core Drill: []" x []" × []"			
			Generator				
SUPPLIES		1					
[]" J-Plug and Lock (set)		0 -1 -1141	- I Hama Haad /	Damaged Tools / PPE:			
[]" x []' Prepacked Screen		Addition					
Flush-Mount Traffic Cover ["] Diam			Forklift 1	rental			
4" x 4" x 5' Sq. Steel Protective Well C	over/Riser	_					
Concrete Anchor Bolts							
[30] or [55] gallon Drum, each							
		A		1015			
APPROVALS & SIGNATURES			Joseph .	Tom Hon			
Vista Field Engineer		Client's Su	pervisor:				
NOTES:	*		S	amples Returned to Vista Lab			
	Kin daries	tence		shed all little			
things necessary.	Re down	CIVO	THE THE				
OPS DPT footage:	age:['I OPS A	uger Footage:	1 '1 OPS 2" Wel	I Material Footage:[']			
#Total Test Holes:] #Cores:] H2O Samples:] Gamma Log Ft:		illed Ft:[] Well Ft:				
Vista GeoScience • 130 Capital Drive, Suite C • 0							



Expert Environmental Support Services for Site Investigation & Remediation

August 18, 2016

Patrick Appel

EA Engineering, Science, and Technology, LLC 405 South Highway 121, Building C, Suite 100 Lewisville, TX 75067

Via E-Mail: mailto:pappel@eaest.com

RE: DRAFT REPORT; Vista GeoScience Project No. 15250.02

Jones Road Superfund Site, EHC Liquid ISCR Reagent Injections

Dear Patrick:

Enclosed is Vista's summary remediation and injection application report for the above referenced project. The report includes a project overview, pre-mobilization and injection activities, summary tables and charts, injections logs, and site photos.

We will be anxious to hear any feedback from you as well as post-injection monitoring data you can provide. We truly appreciate providing these services to EA Engineering and look forward to working with you again on your future projects.

Please feel to call us if you have any questions or comments regarding this report.

Sincerely,

TJ Haley

Gulf Coast Regional Manager

Haley

tjhaley@vistageoscience.com



Draft Report

EHC - Liquid In-Situ Injection,
Jones Road Superfund Site
Harris County, Texas
EPA Identification No. TXN000605460



Prepared for:



EA Engineering, Science, and Technology
Lewisville, Texas
March 2016

TABLE OF CONTENTS

1. Bo	ackground and Project Overview	2
2. Pr	re-Mobilization Activities	3
3. In	jection Event	
1.1	Mobilization and Site Preparation	3
1.2	Area A	6
1.3	Area B	6
4. Su	ımmary	7
Append	dix A: Injection Logs	8
Annen	div R. Project Photos	\$

Application of EHC-L Solution at Jones Road Superfund Site, Houston, Texas

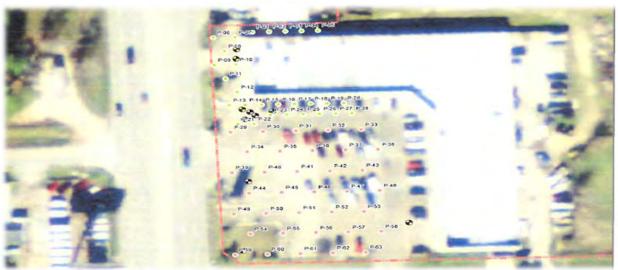
1. Background and Project Overview

EA contracted Vista Geoscience (Vista) to install Peroxy Chem's EHC-Liquid ISCR Reagent (EHC-L) solution for remediation of contaminants at the Jones Road Superfund Site located at 11600 Jones Road Houston TX, starting on January 22nd and continuing through February 3rd of 2016.

The site is located in the northwest portion of Harris County, Texas. The source of site contamination is the former Bell Dry Cleaners facility, which was located within the Cypress Shopping Center at 11600 Jones Road, approximately 0.5 miles north of the intersection of Jones Road and Farm to Market (FM) 1960, outside the city limits of northwest Houston, Texas. The Cypress Shopping Center was constructed in 1984, and the former Bell facility began dry cleaning operations sometime in 1988, using perchloroethylene (PCE). The former Bell facility continued operating through May 2002 when the dry cleaning operations were shut down. Hazardous substances present at the site include PCE, and related daughter products including trichloroethylene (TCE), cis-1,2-dichloroethylene (DCE), and vinyl chloride (VC).

The site has undergone numerous investigations beginning in 1994 and continuing through 2008. The site was proposed to the National Priorities List (NPL) on 30 April 2003, and was finalized to the NPL on 29 September 2003. From August 2003 through May 2008, the Texas Commission on Environmental Quality's (TCEQ's) state-lead contractor performed a remedial investigation (RI) and feasibility study at the site, which characterized the nature and extent of constituents present in environmental media at the site. During the RI, 19 monitoring wells were installed across the area of the site (Figure 2). Soil, ground water, and vapor intrusion samples were collected, and a bench scale treatability study was completed to evaluate the application of in situ chemical oxidation and bioremediation treatment technologies. Routine quarterly ground water sampling was also performed.

Site air photo with injection locations



2. Pre-Mobilization Activities

All applicable licenses, insurance, MSDS, JSA, and health and safety plans from Vista Geoscience were provided and reviewed by EA prior to mobilizing to the site on January 22nd 2016.

On January 22nd 2016 Vista mobilized to the Jones Road Superfund site located at 11600 Jones Road Houston Texas for pre-injection project activities. The activities are listed below.

- Staging of Injection Equipment.
- Set up of Security fence with privacy screen, around staging and mixing area.
- Private Locates conducted by Advanced Utility Locating Services
- Received mixing and holding tanks
- Set up mixing and transfer pumps.
- Filling of Water tanks.
- Adding amendments to water to assist with removing oxygen from the water.
- Received partial shipment of chemicals.

Over the next couple of days Vista mixed and prepared injection solutions so that dissolved oxygen (DO) levels were below 0.5 milligrams per liter and oxidation reduction potential (ORP) was less than 0 mV and negative. This was achieved by adding EHC-L at a rate of 1 gallon per thousand gallons of water. Vista also added sodium sulfite at the rate of .005 pounds per gallon of water. DO and ORP parameters dropped within the 24 hours specified by EA in the scope of work.



Injection Staging and mixing area

3. Injection Event

1.1 Mobilization and Site Preparation

Vista mobilized the remaining injection equipment to 11600 Jones Road on January 25th, 2016 including the custom Clean-Inject™ slurry remediation unit, a track mounted Geoprobe 7822DT, a track mounted Geoprobe 6610DT direct push rig with direct-push injection tooling, a 40 HR HAZWOPER trained crew, and site work zone delineation equipment. The site was secured using highly visible road cones with caution tape, injection hose ramps and an exclusion area was marked off. The Vista Crew met with EA

project team members to locate and identify the injection locations, participate in the Vista health and safety meeting and review the injection process.

The first day was spent checking DO and ORP levels in the mixing and water holding tanks, completion of the mixing and transfer systems, and transferring EHC-L solution to mixing tank. Unloading and staging of injection hoses and injection tooling.

The EHC-L mixture was deemed thicker than first anticipated. Due to this, anaerobic water was added to the drums of EHC-L and mixed with a paddle mixer on a hand held drill prior to being transferred with a 2-inch trash pump and a 1-inch air diagram pump into the recirculation line of the mixing tank to help sheer it up. Once the right amount of EHC-L was reached, the EHC-L dry mix and potassium bicarbonate was added using the same mixing and transfer procedure as the EHC-L. The total mixture was allowed to recirculate from the bottom of the tank through a 2-inch hose back to the bottom of the tank to not allow for the re-introduction of oxygen to the solution.





Figure 1

After the solution was allowed to recirculate for at least 10 minutes, the DO and ORP levels were again checked to insure they did not change or go up after mixing. Once it was deemed those levels where within specifications, the appropriate amount of Dehalococcoides (DHC) inoculum was added.







The injection locations were separated into two different areas, A and B. Each area had a different ratio of the EHC-L product to water and different injection intervals (see Table 1). The target injection intervals were four foot thick zones, so Vista utilized a 1.5" custom retractable injection tool with a four foot stainless steel wire wrapped screen. Injections were monitored using digital flow and pressure gauges, and were documented by the operator. Less than one gallon of surfacing was experienced at some of the locations. Each location was started individually and with increased pressure in 5 PSI increments. See the attached injection logs in Appendix A for individual flows, volumes, and notes. After injections were completed, boring locations were backfilled with bentonite and patched with concrete to match the existing surface. Any spilled product was vacuumed up and used for re-injection after being screened for solids and debris.





Table 1. Injection Summary Table

		Injection	Interval		Inj	ectate Mixt	ure		Total Volume		
	Point	Top ft bgs	Bottom ft bgs	Water (gal)	EHC-L (drum)	Dry Mix (lbs)	KHCO ₃	DHC Liters	Injection (gal)		
	P-01	28	32	400	2	100	44	0.9	505		
	P-02	28	32	400	2	100	44	0.9	505		
	P-03	28	32	400	2	100	44	0.9	505		
	P-04	28	32	400	2	100	44	0.9	505 505		
	P-05	28	32	400	2	100	44	0.9	505		
	P-06	28	32	400	2	100	44	0.9	505		
	P-07	28	32	400	2	100	44	0.9	505		
	P-08	28	32	400	2	100	44	0.9	505		
	P-09	28	32	400	2	100	44	0.9	505 505 505 505		
	P-10	28	32	400	2	100	44	0.9			
S	P-11	28	32	400	2	100	44	0.9			
Points	P-12	27	31	400	2	100	44	0.9			
Po	P-13	27	31	400	2	100	44	0.9	505		
	P-14	27	31	400	2	100	44	0.9	505		
tio	P-15	27	31	400	2	100	44	0.9	505		
A-Injection	P-16	27	31	400	2	100	44	0.9	505		
Ē	P-17	27	31	400	2	100	44	0.9	505		
4	P-18	27	31	400	2	100	44	0.9	505		
	P-19	27	31	400	2	100	44	0.9	505		
	P-20	27	31	400	2	100	44	0.9	505		
	P-21	27	31	400	2	100	44	0.9	505		
	P-22	27	31	400	2	100	44	0.9	505		
	P-23	27	31	400	2	100	44	0.9	505		
	P-24	27	31	400	2	100	44	0.9	505		
	P-25	27	31	400	2	100	44	0.9	505		
	P-26	27	31	400	2	100	44	0.9	505		
	P-27	27	31	400	2	100	44	0.9	505		
	P-28	27	31	400	2	100	44	0.9	505		

		Injection	Interval		Total Volume					
	Point	Top ft bgs	Bottom ft bgs	Water (gal)	EHC-L (drum)	Dry Mix (1bs)	KHCO; (lbs)	DHC Liters	Injection (gal)	
	P-29	28	32	850	2	100	88	1.8	955	
B-Injection Points	P-30	28	32	850	2	100	88	1.8	955	
	P-31	28	32	850	2	100	88	1.8	955	
	P-32	28	32	850	2	100	88	1.8	955	
2	P-33	28	32	850	2	100	88	1.8	955	
Po	P-34	29	33	850	2	100	88	1.8	955	
5	P-35	29	33	850	2	100	88	1.8	955	
ž	P-36	29	33	850	2	100	88	1.8	955	
jec	P-37	29	33	850	2	100	88	1.8	955	
Ę	P-38	29	33	850	2	100	88	1.8	955	
8	P-39	29	33	850	2	100	88	1.8	955	
	P-40	29	33	850	2	100	88	1.8	955	
	P-41	29	33	850	2	100	88	1.8	955	
	P-42	29	33	850	2	100	88	1.8	955	
	P-43	29	33	850	2	100	88	1.8	955	
	P-44	29	33	850	2	100	88	1.8	955	
	P-45	29	33	850	2	100	88	1.8	955	
	P-46	29	33	850	2	100	88	1.8	955	
	P-47	29	33	850	2	100	88	1.8	955	
	P-48	29	33	850	2	100	88	1.8	955	
	P-49	29	33	850	2	100	88	1.8	955	
Points	P-50	29	33	850	2	100	88	1.8	955	
ō	P-51	29	33	850	2	100	88	1.8	955	
-	P-52	29	33	850	2	100	88	1.8	955	
0	P-53	29	33	850	2	100	88	1.8	955	
ect	P-54	29	33	850	2	100	88	1.8	955	
Ē	P-55	29	33	850	2	100	88	1.8	955	
B-Injection	P-56	29	33	850	2	100	88	1.8	955	
	P-57	29	33	850	2	100	88	1.8	955	
	P-58	29	33	850	2	100	88	1.8	955	
	P-59	29	33	850	2	100	88	1.8	955	
	P-60	50	54	850	2	100	88	1.8	955	
	P-61	50	54	850	2	100	88	1.8	955	
	P-62	50	54	850	2	100	88	1.8	955	
	P-63	50	54	850	2	100	88	1.8	955	

1.2 Area A

Area	Injection Points	Date Started	Date Completed	Top of Injection Interval	Bottom of Injection Interval	Interval Lentgh	Target Water (gal)	EHC - L (gal)	Target Dry Mix (Ibs)	Target KHC03 (lbs)	Target DHC (Its)	Total Volume (gal)
	P- 01	1/29/16	1/29/16	28	32	4	400.0	100.0	50.0	44.0	0.9	505.0
	P-02	1/30/16	1/30/16	28	32	4	400.0	100.0	50.0	44.0	0.9	505.0
	P-03	1/29/16	1/29/16	28	32	4	400.0	100.0	50.0	44.0	0.9	505.0
	P-04	1/29/16	1/29/16	28	32	4	400.0	100.0	50.0	44.0	0.9	505.0
	P-05	1/29/16	1/29/16	28	32	4	400.0	100.0	50.0	44.0	0.9	505.0
	P-06	1/29/16	1/29/16	28	32	4	400.0	100.0	50.0	44.0	0.9	505.0
	P - 07	1/29/16	1/29/16	28	32	4	400.0	100.0	50.0	44.0	0.9	505.0
	P-08	1/29/16	1/29/16	28	32	4	400.0	100.0	50.0	44.0	0.9	505.0
	P-09	1/29/16	1/29/16	28	32	4	400.0	100.0	50.0	44.0	0.9	505.0
	P- 10	1/29/16	1/29/16	28	32	4	400.0	100.0	50.0	44.0	0.9	505.0
	P-11	1/29/16	1/29/16	28	32	4	400.0	100.0	50.0	44.0	0.9	505,0
	P- 12	1/29/16	1/29/16	27	31	4	400.0	100.0	50.0	44.0	0.9	505.0
	P-13	1/30/16	1/30/16	27	31	4	400.0	100.0	50.0	44.0	0.9	505.0
	P- 14	1/28/16	1/28/16	27	31	4	400.0	100.0	50.0	44.0	0.9	505.0
	P - 15	1/28/16	1/28/16	27	31	4	400.0	100.0	50.0	44.0	0.9	505.0
A	P- 16	1/28/16	1/28/16	27	31	4	400.0	100.0	50.0	44.0	0.9	505.0
	P- 17	1/28/16	1/28/16	27	31	4	400.0	100.0	50.0	44.0	0.9	505.0
	P- 18	1/28/16	1/28/16	27	31	4	400.0	100.0	50.0	44.0	0.9	505.0
	P- 19	1/29/16	1/29/16	27	31	4	400.0	100.0	50.0	44.0	0.9	505.0
	P-20	1/28/16	1/28/16	27	31	4	400.0	100.0	50.0	44.0	0.9	505.0
	P-21	1/30/16	1/30/16	27	31	4	400.0	100.0	50.0	44.0	0.9	505.0
	P-22	1/30/16	1/30/16	27	31	4	400.0	100.0	50.0	44.0	0.9	505.0
	P-23	1/28/16	1/28/16	27	31	4	400.0	100.0	50.0	44.0	0.9	505.0
	P-24	1/28/16	1/28/16	27	31	4	400.0	100.0	50.0	44.0	0.9	505.0
	P - 25	1/28/16	1/28/16	27	31	4	400.0	100.0	50.0	44.0	0.9	505.0
	P-26	1/29/16	1/29/16	27	31	4	400.0	100.0	50.0	44.0	0.9	505.0
	P-27	1/29/16	1/29/16	27	31	4	400.0	100.0	50.0	44.0	0.9	505.0
	P - 28	1/28/16	1/28/16	27	31	4	400.0	100.0	50.0	44.0	0.9	505.0
		Area To	otals				11200.0	2800.0	1400.0	1232.0	25.2	14140

1.3 Area B

Area	Injection Points	Date Started	Date Completed	Top of Injection Interval	Bottom of Injection Interval	Interval Lentgh	Target Water (gal)	EHC - L (gal)	Target Dry Mix (lbe)	Target KHCO3 (lbs)	Target DHC (its)	Target Tot Volume (gal)
	P - 29	1/27/16	1/27/16	28	32	4	850.0	100.0	50.0	0.88	1.8	955.0
	P-30	1/30/16	1/30/16	28	32	4	850.0	100.0	50.0	0.88	1.8	955.0
	P-31	1/27/16	1/27/16	28	32	4	850.0	100.0	50.0	88.0	1.8	955.0
	P - 32	1/30/16	1/30/16	28	32	4	850.0	100.0	50.0	0.88	1.8	955.0
	P-33	1/27/16	1/27/16	28	32	4	850.0	100.0	50.0	0.88	1.8	955.0
	P-34	1/27/16	1/27/16	29	33	4	850.0	100.0	50.0	0.88	1.8	955.0
	P-35	1/30/16	1/30/16	29	33	4	850.0	100.0	50.0	0.88	1.8	955.0
	P-36	1/30/16	1/30/16	29	33	4	850.0	100.0	50.0	88.0	1.8	955.0
	P- 37	1/31/16	1/31/16	29	33	4	850.0	100.0	50.0	88.0	1.8	955.0
	P-38	1/31/16	1/31/16	29	33	4	850.0	100.0	50.0	0.88	1,8	955.0
	P-39	1/26/16	1/26/16	29	33	4	850.0	100.0	50.0	88.0	1.8	955.0
	P-40	2/1/16	2/1/16	29	33	4	850.0	100.0	50.0	88.0	1.8	955.0
	P-41	1/26/16	1/26/16	29	33	4	850.0	100.0	50.0	0.88	1.8	955.0
	P-42	1/31/16	1/31/16	29	33	4	850.0	100.0	50.0	0.88	1.8	955.0
	P-43	1/26/16	1/26/16	29	33	4	850.0	100.0	50.0	88.0	1.8	955.0
	P-44	2/1/16	2/1/16	29	33	4	850.0	100.0	50.0	88.0	1.8	955.0
	P-45	2/1/16	2/1/16	29	33	4	850.0	100.0	50.0	88.0	1.8	955.0
	P-46	2/1/16	2/1/16	29	33	4	850.0	100.0	50.0	88.0	1.8	955.0
В	P - 47	1/31/16	1/31/16	29	33	4	850.0	100.0	50.0	88.0	1.8	955.0
	P-48	1/27/16	1/27/16	29	33	4	850.0	100.0	50.0	88.0	1.8	955.0
	P-49	2/1/16	2/1/16	29	33	4	850.0	100.0	50.0	88.0	1.8	955.0
	P-50	2/1/16	2/1/16	29	33	4	850.0	100.0	50.0	88.0	1.8	955.0
	P-51	1/31/16	1/31/16	29	33	4	850.0	100.0	50.0	88.0	1.8	955.0
	P - 52	1/27/16	1/27/16	29	33	4	850.0	100.0	50.0	88.0	1.8	955.0
	P - 53	1/26/16	1/26/16	29	33	4	850.0	100.0	50.0	88.0	1.8	955.0
	P - 54	2/1/16	2/1/16	29	33	4	850.0	100.0	50.0	88.0	1.8	955.0
	P-55	1/26/16	1/26/16	29	33	4	850.0	100.0	50.0	88.0	1.8	955.0
	P - 56	1/31/16	1/31/16	29	33	4	850.0	100.0	50.0	88.0	1.8	955.0
	P - 57	1/26/16	1/26/16	29	33	4	850.0	100.0	50.0	88.0	1.8	955.0
	P-58	1/31/16	1/31/16	29	33	4	850.0	100.0	50.0	88.0	1.8	955.0
	P-59	1/27/16	1/27/16	46	50	4	850.0	100.0	50.0	88.0	1.8	955.0
	P-60	1/27/16	1/27/16	50	54	4	850.0	100.0	50.0	88.0	1.8	955.0
	P-61	1/26/16	1/26/16	50	54	4	850.0	100.0	50.0	88.0	1.8	955.0
	P-62	1/31/16	1/31/16	50	54	4	850.0	100.0	50.0	88.0	1.8	955.0
	P-63	1/26/16	1/26/16	50	54	4	850.0	100.0	50.0	88.0	1.8	955.0
		Area Tot					29750.0	3500 0	1750.0	3080.0	63.0	33425.0

4. Summary

A total of 6,489 gallons of EHC-L, 3,344 pounds of EHC-L Dry Mix, 4,798 pounds of potassium bicarbonate, 108 liters of DHC, and 40,948 gallons of water were injected into the 63 locations over eight days. The injections and site cleanup were concluded on February 2nd after which all equipment and debris were mobilized offsite.

Appendix A: Project Photos



Cleaning Out EHC-L Drums



Multiple Point Injection Manifold



Flow meters



Injection set up - Area A



Injection set up – Area B



Protective Hose Ramps

Appendix B: Injection Logs

Area	Injection Points	Date Started	Date Completed	Top of Injection Interval	Bottom of Injection Interval	Interval Lentgh	Target Water (gal)	EHC - L (gal)	Target Dry Mix (Ibs)	Target KHCO3 (lbs)	Target DHC (Its)	Target Total Volume (gal)	Actual Water Injected (gal)	Difference	Actual EHC - L Injected	Difference	Actual Dry Mix Injected (lbs)	Difference	Actual KHC03 Injected	Difference	Actual DHC Injected (Its)	Difference	Actual Total Volume Injected	Difference
	P - 01	1/29/16	1/29/16	28	32	4	400.0	100.0	50.0	44.0	0.9	505.0	400.0	0.0	100.0	0.0	50.0	0.0	44.0	0.0	0.9	0.0	505.0	0.0
	P - 02	1/30/16	1/30/16	28	32	4	400.0	100.0	50.0	44.0	0.9	505.0	400.0	0.0	100.0	0.0	50.0	0.0	44.0	0.0	0.9	0.0	505.0	0.0
	P - 03	1/29/16	1/29/16	28	32	4	400.0	100.0	50.0	44.0	0.9	505.0	400.0	0.0	100.0	0.0	50.0	0.0	44.0	0.0	0.9	0.0	505.0	0.0
	P - 04	1/29/16	1/29/16	28	32	4	400.0	100.0	50.0	44.0	0.9	505.0	400.0	0.0	100.0	0.0	50.0	0.0	44.0	0.0	0.9	0.0	505.0	0.0
	P - 05	1/29/16	1/29/16	28	32	4	400.0	100.0	50.0	44.0	0.9	505.0	400.0	0.0	100.0	0.0	50.0	0.0	44.0	0.0	0.9	0.0	505.0	0.0
	P - 06	1/29/16	1/29/16	28	32	4	400.0	100.0	50.0	44.0	0.9	505.0	400.0	0.0	100.0	0.0	50.0	0.0	44.0	0.0	0.9	0.0	505.0	0.0
	P - 07	1/29/16	1/29/16	28	32	4	400.0	100.0	50.0	44.0	0.9	505.0	400.0	0.0	100.0	0.0	50.0	0.0	44.0	0.0	0.9	0.0	505.0	0.0
	P - 08	1/29/16	1/29/16	28	32	4	400.0	100.0	50.0	44.0	0.9	505.0	400.0	0.0	100.0	0.0	50.0	0.0	44.0	0.0	0.9	0.0	505.0	0.0
	P - 09	1/29/16	1/29/16	28	32	4	400.0	100.0	50.0	44.0	0.9	505.0	400.0	0.0	100.0	0.0	50.0	0.0	44.0	0.0	0.9	0.0	505.0	0.0
	P - 10	1/29/16	1/29/16	28	32	4	400.0	100.0	50.0	44.0	0.9	505.0	400.0	0.0	100.0	0.0	50.0	0.0	44.0	0.0	0.9	0.0	505.0	0.0
	P - 11	1/29/16	1/29/16	28	32	4	400.0	100.0	50.0	44.0	0.9	505.0	400.0	0.0	100.0	0.0	50.0	0.0	44.0	0.0	0.9	0.0	505.0	0.0
	P - 12	1/29/16	1/29/16	27	31	4	400.0 400.0	100.0	50.0 50.0	44.0 44.0	0.9	505.0 505.0	400.0 400.0	0.0	100.0 100.0	0.0	50.0 50.0	0.0	44.0 44.0	0.0	0.9 0.9	0.0	505.0 505.0	0.0
	P - 13 P - 14	1/30/16	1/30/16 1/28/16	27 27	31 31	4	400.0	100.0	50.0	44.0	0.9	505.0	400.0	0.0	100.0	0.0	50.0	0.0	44.0	0.0	0.9	0.0	505.0	0.0
	P - 14 P - 15	1/28/16	1/28/16	27	31	4	400.0	100.0	50.0	44.0	0.9	505.0	400.0	0.0	100.0	0.0	50.0	0.0	44.0	0.0	0.9	0.0	505.0	0.0
Α	P - 15	1/28/16	1/28/16	27	31	4	400.0	100.0	50.0	44.0	0.9	505.0	400.0	0.0	100.0	0.0	50.0	0.0	44.0	0.0	0.9	0.0	505.0	0.0
	P - 10	1/28/16	1/28/16	27	31	4	400.0	100.0	50.0	44.0	0.9	505.0	400.0	0.0	100.0	0.0	50.0	0.0	44.0	0.0	0.9	0.0	505.0	0.0
	P - 18	1/28/16	1/28/16	27	31	4	400.0	100.0	50.0	44.0	0.9	505.0	400.0	0.0	100.0	0.0	50.0	0.0	44.0	0.0	0.9	0.0	505.0	0.0
	P - 19	1/29/16	1/29/16	27	31	4	400.0	100.0	50.0	44.0	0.9	505.0	400.0	0.0	100.0	0.0	50.0	0.0	44.0	0.0	0.9	0.0	505.0	0.0
	P - 20	1/28/16	1/28/16	27	31	4	400.0	100.0	50.0	44.0	0.9	505.0	400.0	0.0	100.0	0.0	50.0	0.0	44.0	0.0	0.9	0.0	505.0	0.0
	P - 21	1/30/16	1/30/16	27	31	4	400.0	100.0	50.0	44.0	0.9	505.0	400.0	0.0	100.0	0.0	50.0	0.0	44.0	0.0	0.9	0.0	505.0	0.0
	P - 22	1/30/16	1/30/16	27	31	4	400.0	100.0	50.0	44.0	0.9	505.0	400.0	0.0	100.0	0.0	50.0	0.0	44.0	0.0	0.9	0.0	505.0	0.0
	P - 23	1/28/16	1/28/16	27	31	4	400.0	100.0	50.0	44.0	0.9	505.0	400.0	0.0	100.0	0.0	50.0	0.0	44.0	0.0	0.9	0.0	505.0	0.0
	P - 24	1/28/16	1/28/16	27	31	4	400.0	100.0	50.0	44.0	0.9	505.0	400.0	0.0	100.0	0.0	50.0	0.0	44.0	0.0	0.9	0.0	505.0	0.0
	P - 25	1/28/16	1/28/16	27	31	4	400.0	100.0	50.0	44.0	0.9	505.0	400.0	0.0	100.0	0.0	50.0	0.0	44.0	0.0	0.9	0.0	505.0	0.0
	P - 26	1/29/16	1/29/16	27	31	4	400.0	100.0	50.0	44.0	0.9	505.0	400.0	0.0	100.0	0.0	50.0	0.0	44.0	0.0	0.9	0.0	505.0	0.0
	P - 27	1/29/16	1/29/16	27	31	4	400.0	100.0	50.0	44.0	0.9	505.0	400.0	0.0	100.0	0.0	50.0	0.0	44.0	0.0	0.9	0.0	505.0	0.0
	P - 28	1/28/16	1/28/16	27	31	4	400.0	100.0	50.0	44.0	0.9	505.0	400.0	0.0	100.0	0.0	50.0	0.0	44.0	0.0	0.9	0.0	505.0	0.0
		Area	Totals				11200.0	2800.0	1400.0	1232.0	25.2	14140.0	11200.0	0.0	2800.0	0.0	1400.0	0.0	1232.0	0.0	25.2	0.0	14140.0	0.0

Area	Injection Points	Date Started	Date Completed	Top of Injection Interval	Bottom of Injection Interval	Interval Lentgh	Target Water (gal)	EHC - L (gal)	Target Dry Mix (lbs)	Target KHCO3 (lbs)	Target DHC (Its)	Target Total Volume (gal)	Actual Water Injected (gal)	Difference	Actual EHC - L Injected	Difference	Actual Dry Mix Injected (lbs)	Difference	Actual KHCO3 Injected	Difference	Actual DHC Injected (Its)	Difference	Actual Total Volume Injected	Difference
	P - 29	1/27/16	1/27/16	28	32	4	850.0	100.0	50.0	88.0	1.8	955.0	850.0	0.0	100.0	0.0	50.0	0.0	88.0	0.0	1.8	0.0	955.0	0.0
	P - 30	1/30/16	1/30/16	28	32	4	850.0	100.0	50.0	88.0	1.8	955.0	850.0	0.0	100.0	0.0	50.0	0.0	88.0	0.0	1.8	0.0	955.0	0.0
	P - 31	1/27/16	1/27/16	28	32	4	850.0	100.0	50.0	88.0	1.8	955.0	850.0	0.0	100.0	0.0	50.0	0.0	88.0	0.0	1.8	0.0	955.0	0.0
	P - 32	1/30/16	1/30/16	28	32	4	850.0	100.0	50.0	88.0	1.8	955.0	850.0	0.0	100.0	0.0	50.0	0.0	88.0	0.0	1.8	0.0	955.0	0.0
	P - 33	1/27/16	1/27/16	28	32	4	850.0	100.0	50.0	88.0	1.8	955.0	850.0	0.0	100.0	0.0	50.0	0.0	88.0	0.0	1.8	0.0	955.0	0.0
	P - 34	1/27/16	1/27/16	29	33	4	850.0	100.0	50.0	88.0	1.8	955.0	850.0	0.0	100.0	0.0	50.0	0.0	88.0	0.0	1.8	0.0	955.0	0.0
	P - 35	1/30/16	1/30/16	29	33	4	850.0	100.0	50.0	88.0	1.8	955.0	850.0	0.0	100.0	0.0	50.0	0.0	88.0	0.0	1.8	0.0	955.0	0.0
	P - 36	1/30/16	1/30/16	29	33	4	850.0	100.0	50.0	88.0	1.8	955.0	850.0	0.0	100.0	0.0	50.0	0.0	88.0	0.0	1.8	0.0	955.0	0.0
	P - 37	1/31/16	1/31/16	29	33	4	850.0	100.0	50.0	88.0	1.8	955.0	850.0	0.0	100.0	0.0	50.0	0.0	88.0	0.0	1.8	0.0	955.0	0.0
	P - 38	1/31/16	1/31/16	29	33	4	850.0	100.0	50.0	88.0	1.8	955.0	850.0	0.0	100.0	0.0	50.0	0.0	88.0	0.0	1.8	0.0	955.0	0.0
	P - 39	1/26/16	1/26/16	29	33	4	850.0	100.0	50.0	88.0	1.8	955.0	850.0	0.0	100.0	0.0	50.0	0.0	88.0	0.0	1.8	0.0	955.0	0.0
	P - 40	2/1/16	2/1/16	29	33	4	850.0	100.0	50.0	88.0	1.8	955.0	850.0	0.0	100.0	0.0	50.0	0.0	88.0	0.0	1.8	0.0	955.0	0.0
	P - 41	1/26/16	1/26/16	29	33	4	850.0	100.0	50.0	88.0	1.8	955.0	850.0	0.0	100.0	0.0	50.0	0.0	88.0	0.0	1.8	0.0	955.0	0.0
	P - 42	1/31/16	1/31/16	29	33	4	850.0	100.0	50.0	88.0	1.8	955.0	850.0	0.0	100.0	0.0	50.0	0.0	88.0	0.0	1.8	0.0	955.0	0.0
	P - 43	1/26/16	1/26/16	29	33	4	850.0	100.0	50.0	88.0	1.8	955.0	850.0	0.0	100.0	0.0	50.0	0.0	88.0	0.0	1.8	0.0	955.0	0.0
В	P - 44	2/1/16	2/1/16	29	33	4	850.0	100.0	50.0	88.0	1.8	955.0	850.0	0.0	163.0	-63.0	115.0	-65.0	250.0	-162.0	8.3	-6.5	1033.0	-78.0
_	P - 45	2/1/16	2/1/16	29	33	4	850.0	100.0	50.0	88.0	1.8	955.0	850.0	0.0	163.0	-63.0	115.0	-65.0	250.0	-162.0	8.3	-6.5	1033.0	-78.0
	P - 46	2/1/16	2/1/16	29	33	4	850.0	100.0	50.0	88.0	1.8	955.0	850.0	0.0	100.0	0.0	50.0	0.0	88.0	0.0	1.8	0.0	955.0	0.0
	P - 47	1/31/16	1/31/16	29	33	4	850.0	100.0	50.0	88.0	1.8	955.0	850.0	0.0	100.0	0.0	50.0	0.0	88.0	0.0	1.8	0.0	955.0	0.0
	P - 48	1/27/16	1/27/16	29	33	4	850.0	100.0	50.0	88.0	1.8	955.0	850.0	0.0	100.0	0.0	50.0	0.0	88.0	0.0	1.8	0.0	955.0	0.0
	P - 49	2/1/16	2/1/16	29	33	4	850.0	100.0	50.0	88.0	1.8	955.0	850.0	0.0	100.0	0.0	50.0	0.0	88.0	0.0	1.8	0.0	955.0	0.0
	P - 50	2/1/16	2/1/16	29	33	4	850.0	100.0	50.0	88.0	1.8	955.0	850.0	0.0	100.0	0.0	50.0	0.0	88.0	0.0	1.8	0.0	955.0	0.0
	P - 51	1/31/16	1/31/16	29	33	4	850.0	100.0	50.0	88.0	1.8	955.0	850.0	0.0	100.0	0.0	50.0	0.0	88.0	0.0	1.8	0.0	955.0	0.0
	P - 52	1/27/16	1/27/16	29	33	4	850.0	100.0	50.0	88.0	1.8	955.0	850.0	0.0	100.0	0.0	50.0	0.0	88.0	0.0	1.8	0.0	955.0	0.0
	P - 53	1/26/16	1/26/16	29	33	4	850.0	100.0	50.0	88.0	1.8	955.0	850.0	0.0	100.0	0.0	50.0	0.0	88.0	0.0	1.8	0.0	955.0	0.0
	P - 54	2/1/16	2/1/16	29	33	4	850.0	100.0	50.0	88.0	1.8	955.0	850.0	0.0	163.0	-63.0	115.0	-65.0	250.0	-162.0	8.3	-6.5	1033.0	-78.0
	P - 55	1/26/16	1/26/16	29	33	4	850.0	100.0	50.0	88.0	1.8	955.0	850.0	0.0	100.0	0.0	50.0	0.0	88.0	0.0	1.8	0.0	955.0	0.0
	P - 56	1/31/16	1/31/16	29	33	4	850.0	100.0	50.0	88.0	1.8	955.0	850.0	0.0	100.0	0.0	50.0	0.0	88.0	0.0	1.8	0.0	955.0	0.0
	P - 57	1/26/16	1/26/16	29	33	4	850.0	100.0	50.0	88.0	1.8	955.0	850.0	0.0	100.0	0.0	50.0	0.0	88.0	0.0	1.8	0.0	955.0	0.0
	P - 58	1/31/16	1/31/16	29	33	4	850.0	100.0	50.0	88.0	1.8	955.0	850.0	0.0	100.0	0.0	50.0	0.0	88.0	0.0	1.8	0.0	955.0	0.0
	P - 59	1/27/16	1/27/16	46	50	4	850.0 850.0	100.0 100.0	50.0 50.0	88.0 88.0	1.8	955.0 955.0	850.0 850.0	0.0	100.0 100.0	0.0	50.0 50.0	0.0	88.0 88.0	0.0	1.8 1.8	0.0	955.0 955.0	0.0
	P - 60	1/27/16 Area T	1/27/16 otals	50	54	4	27200.0	3200.0	1600.0	2816.0	57.6	30560.0	27200.0	0.0	3389.0	-189.0	1795.0	-195.0	3302.0	-486.0	77.2	-19.6	30794.0	-234.0

												BOS 20	O Injecti	on Log								
Project No.:	15250.02	Site:		Jones Ro	oad Supe	erfund Site				AREA:							В					Page: 1
			cience, and Techno	ology		_			Injecte	d Product:					E	HC - L, Dry N	/lix, KHCO3,	DHC				Date(s): 1/26/2016
Address:	11600 Jon	es Road, I	Houston Texas			_			Injec	tion Crew:				TJI	laley, Rich	Freeman, D	David Fonta	na, Byron F	Pitulski			Drill Rig:
			İ																			
Area B Point No.	Date (2015)	Start Time	End Time	Interval Depth (feet)	Bottom Interval Depth (feet)	(psi)	Flow Press. (psi)	Flow Rate (gpm)	Target Water (gal.)	Target EHC - L (gal.)	(lbs)	(lbs.)	Target DHC (Its)	Target Total Volume (gal.)	Injected Water (gal.)	Injected EHC - L (gal.)	InjectedD ry Mix (Ibs)	Injected KHCO3 (lbs.)	Injected DHC (Its)	Injected Total Volume (gal.)	Surfacing Yes or No	Notes/Comments:
	1/26/16	9:30	11:30	29	33	65	55	5	850	100	50	88	1.8	955	596	70	35	62	1.26	670	No	
55		11:30	12:18				70	/							254	30	15	26	0.54	285	No	Turned Flow up as per Client
		Pi	oint Totals						850	100	50	88	1.8	955	850	100	50	88	1.8	955		
	1/26/16	9:40	11:30	50	54	65	55	5	850	100	50	88	1.8	955	561	66	33	58	1.19	630	No	
63		11:30	12:24				65	7							289	34	17	30	0.61	325	No	Turned Flow up as per Client
		P	oint Totals	•					850	100	50	88	1.8	955	850	100	50	88	1.8	955		
	1/26/16	10:40	11:30	29	33	65	50	5	850	100	50	88	1.8	955	267	31	16	28	0.57	300	No	
53		11:30	13:12				55	6.5							583	69	34	60	1.23	655	No	Turned Flow up as per Client
		P	oint Totals						850	100	50	88	1.8	955	850	100	50	88	1.8	955		
	1/26/16	11:00	11:30	50	54	70	55	5	850	100	50	88	1.8	955	134	16	8	14	0.28	150	No	
61	1720710	11:30	13:37	30	51	,,,	60	6.5	030	100	- 00	00	1.0	700	716	84	42	74	1.52	805	No	Turned Flow up as per Client
		P	oint Totals						850	100	50	88	1.8	955	850	100	50	88	1.8	955		
57	1/26/16	14:36	17:16	29	33	70	60	7	850	100	50	88	1.8	955	850	100	50	88	1.80	955	No	
5/																						
		P	oint Totals						#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!		
	4107147	45.00	47.15	_		1 (0				400		00	4.0	055		400			4.00	0.55		
41	1/26/16	15:29	17:45	29	33	60	50	/	850	100	50	88	1.8	955	850	100	50	88	1.80	955	No	
		P	oint Totals						#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!		
	1/26/16	15:45	18:17	29	33	85	80	5.5	850	100	50	88	1.8	955	850	100	50	88	1.80	955	No	
39	.,20,10	10.10	10.17	1	-			0.0	000		- 55			,,,,	000				1.00	,,,,		
		P	oint Totals						850	100	50	88	1.8	955	850	100	50	88	1.8	955		
															*DEE!	"DEE!	"DEEL	"DEEL	#DEE!	#DEE!		
		Page To	tals												#REF!	#REF!	#REF!	#REF!	#REF!	#REF!		

												BOS 20	0 Injecti	on Log									
Project No.:	15250.02	Site:		Jones R	oad Supe	erfund Site	<u>:</u>			AREA:							В					Page:	1
Client:	EA - Engin	eering, Sc	ience, and Techno	ology					Injecte	d Product:					E	HC - L, Dry I	Mix, KHCO3,	DHC				Date(s):	1/27/2016
Address:	11600 Jon	es Road, F	louston Texas			_			Injec	tion Crew:				TJI	laley, Rich	Freeman, [David Fonta	na, Byron I	Pitulski			Drill Rig:	
Area B Point No.	Date (2015)	Start Time	End Time	Top Interval Depth (feet)	Depth (feet)	Press. (psi)	Flow Press. (psi)	Flow Rate (gpm)	Target Water (gal.)	Target EHC - L (gal.)	Target Dry Mix (lbs)	KHCO3 (lbs.)	Target DHC (Its)	Target Total Volume (gal.)	Injected Water (gal.)	EHC - L (gal.)	InjectedD ry Mix (Ibs)	KHCO3 (lbs.)	Injected DHC (Its)	Injected Total Volume (gal.)	Surfacing Yes or No	Notes/Comments:	
	1/27/16	9:30	11:47	50	54	85	80	7	850	100	50	88	1.8	955	850	100	50	88	1.80	955	No		
60		D-	oint Totals						050	400	F0	00	4.0	955	050	400	50	0.0	4.0	055			
		PU	JIIIL TOLAIS						850	100	50	88	1.8	955	850	100	50	88	1.8	955			
	1/27/16	9:35	11:52	29	33	70	65	7	850	100	50	88	1.8	955	850	100	50	88	1.80	955	No		
52																							
		Po	oint Totals						850	100	50	88	1.8	955	850	100	50	88	1.8	955			
															,								
33	1/27/16	10:10	12:15	28	32	70	60	7	850	100	50	88	1.8	955	850	100	50	88	1.80	955	No		
33		Po	oint Totals						850	100	50	88	1.8	955	850	100	50	88	1.8	955			
									000	100	- 00	- 00	1.0	700	000	100	- 00	- 00	1.0	700			
	1/27/16	10:40	12:53	28	32	80	70	7	850	100	50	88	1.8	955	850	100	50	88	1.80	955	No		
34																							
		Po	oint Totals						850	100	50	88	1.8	955	850	100	50	88	1.8	955			
59	1/27/16	13:53	16:15	46	50	90	80	7	850	100	50	88	1.8	955	850	100	50	88	1.80	955	No	Refusal at 50 feet, Instructed to Inje	ct by client
		De	oint Totals						*555	***************************************	"DEEL	"DEEL	"DEEL	"DEE!	"DEE!	"DEEL	"DEE!	***************************************	*555	"DEEL			
		FU	JIIIL TOLAIS						#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!			
	1/27/16	14:50	17:06	28	32	65	60	7	850	100	50	88	1.8	955	850	100	50	88	1.80	955	No		
31		Po	oint Totals						#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!			
						•							•				•						
	1/27/16	15:30	17:45	28	32	70	65	7	850	100	50	88	1.8	955	850	100	50	88	1.80	955	No		
29																							
		Po	oint Totals						850	100	50	88	1.8	955	850	100	50	88	1.8	955			
		Page Tot	als												#REF!	#REF!	#REF!	#REF!	#REF!	#REF!			
		,																					

												BOS 20	0 Injecti	ion Log									
Project No.:	15250.02	Site	:	Jones R	oad Supe	rfund Site				AREA							Α					Page:	1
Client:	EA - Engir	- neering, S	cience, and Techno	ology					Injecte	d Product:					E	HC - L, Dry l	Mix, KHCO3	, DHC				Date(s):	1/28/2016
Address:	11600 Jon	es Road,	Houston Texas			-			Injec	tion Crew:				TJ	Haley, Rich	Freeman, I	David Font	ana, Byron	Pitulski			Drill Rig:	
				Тор	Bottom	Initial	Flow	Flow	Target	Target	Target	Target	Target	Target	Injected	Injected	InjectedD	Injected	Injected	Injected			
Area B Point No.	Date (2015)	Start Time	End Time	Interval Depth	Interval Depth	Press.	Press.	Rate	Water	EHC - L	Dry Mix		DHC	Total Volume	Water	EHC - L	ry Mix	KHC03	DHC	Total Volume	Surfacing Yes or No	Notes/Comments:	
FUIII IVO.	(2013)	Tille		(feet)	(feet)	(psi)	(psi)	(gpm)	(gal.)	(gal.)	(lbs)	(lbs.)	(Its)	(gal.)	(gal.)	(gal.)	(lbs)	(lbs.)	(Its)	(gal.)	TES OF NO		
	1/28/16	8:45	10:03	27	31	70	65	7	400	100	50	44	0.9	505	400	100	50	44	0.90	505	No		
17	1/20/10	0.43	10.03	21	31	70	03	,	400	100	30	44	0.7	303	400	100	30	77	0.70	303	140		
		F	Point Totals						400	100	50	44	0.9	505	400	100	50	44	0.9	505			
	1/28/16	8:45	9:59	27	31	100	95	7	400	100	50	44	0.9	505	400	100	50	44	0.90	505	No		
14																							
		F	Point Totals						400	100	50	44	0.9	505	400	100	50	44	0.9	505			
	1/00/1/	0.07	10.42			- 00	00	-	400	100			0.0	FOF	100	100	F0.		0.00	FOE		I	
28	1/28/16	9:27	10:43	27	31	90	80	/	400	100	50	44	0.9	505	400	100	50	44	0.90	505	No		
20		F	Point Totals						400	100	50	44	0.9	505	400	100	50	44	0.9	505			
					•													•			•		
	1/28/16	9:36	10:03	27	31	80	70	7	400	100	50	44	0.9	505	156	39	20	17	0.35	197	Yes	Surfacing < 1 gallon out of MW - 1, 5 fee	t to the South
23		10:03	11:13			70	65	5							244	61	30	27	0.55	308			
		F	Point Totals						400	100	50	44	0.9	505	400	100	50	44	0.9	505			
	1 4100141	10.00	44.00	1	T	T /-	T	1 -	I	1 400	T =0			T 505		1 400	T =0			I 505		Ī	
20	1/28/16	10:08	11:23	27	31	65	60	/	400	100	50	44	0.9	505	400	100	50	44	0.90	505	No		
		_	Point Totals						#RFF!	#RFF!	#RFF!	#REF!	#RFF!	#REF!	#RFF!	#REF!	#REF!	#REF!	#REF!	#RFF!			
									#IXLI:	#IXLI:	#IXLI:	#IXLI:	#IXLI:	#IXEI:	#IXEI:	#IXEI:	#IXELL:	#IXLI:	#IXLI:	#IXEI:			
18	1/28/16	12:40	13:52	27	31	80	75	7	400	100	50	44	0.9	505	400	100	50	44	0.90	505	No		
10		F	Point Totals						#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!			
	1/28/16	13:00	13:02	27	31	100	0	0	400	100	50	44	0.9	505	0	0	0	0	0.00	0	No	Max pressure achived, pulled rods tool	did not open
16		16:20	17:38	27	31	70	60	/	100	400	50		0.0	505	400	100	50	44	0.90	505	No		
		- 1	Point Totals						400	100	50	44	0.9	505	400	100	50	44	0.9	505			
	1/28/16	13:41	14:50	27	31	70	65	7	400	100	50	44	0.9	505	400	100	50	44	0.90	505	No	Г	
25	1/20/10	13.41	14.50	21	31	70	03	,	400	100	50	44	0.7	303	400	100	30	44	0.70	303	NU		
20		F	Point Totals						400	100	50	44	0.9	505	400	100	50	44	0.9	505			
	1/28/16	16:10	17:28	27	31	80	70	7	400	100	50	44	0.9	505	400	100	50	44	0.90	505	No		
24																							
		F	Point Totals						400	100	50	44	0.9	505	400	100	50	44	0.9	505			
		Page To	ntals												#REF!	#REF!	#REF!	#REF!	#REF!	#REF!			
		raye II	nais												#IXEI:	#ICEF:	#KLI:	#IXLI:	#KLI!	WIXEI :			

												BOS 20	0 Injecti	on Log								
Project No.:	15250.02	Site:		Jones Ro	oad Supe	rfund Site				AREA:							Α					Page: 1
Client:	EA - Engin	eerina. S	cience, and Techno	loav					Injected	Product:					E	HC - L, Dry I	Mix, KHCO3,	DHC				Date(s): 1/29/2016
			Houston Texas			_				ion Crew:				TJ	Haley, Rich	Freeman. I	David Fonta	ana. Byron l	Pitulski			Drill Rig:
									,						j,	,		, - j				·····g·
Area B Point No.	Date (2015)	Start Time	End Time	Top Interval Depth (feet)	Bottom Interval Depth (feet)	Initial Press. (psi)	Flow Press. (psi)	Flow Rate (gpm)	Target Water (gal.)	Target EHC - L (gal.)	Target Dry Mix (lbs)	Target KHCO3 (lbs.)	Target DHC (Its)	Target Total Volume (gal.)	Injected Water (gal.)	Injected EHC - L (gal.)	InjectedD ry Mix (lbs)	Injected KHCO3 (lbs.)	Injected DHC (Its)	Injected Total Volume (gal.)	Surfacing Yes or No	Notes/Comments:
	1/29/16	8:15	9:28	27	31	80	70	7	400	100	50	44	0.9	505	400	100	50	44	0.90	505	No	
19																						
		P	oint Totals						400	100	50	44	0.9	505	400	100	50	44	0.9	505		
																						•
	1/29/16	8:20	9:31	28	32	70	65	7	400	100	50	44	0.9	505	400	100	50	44	0.90	505	No	
9																						
		P	oint Totals						400	100	50	44	0.9	505	400	100	50	44	0.9	505		
	1/29/16	8:25	9:35	27	31	80	70	7	400	100	50	44	0.9	505	400	100	50	44	0.90	505	No	
27																						
		Р	oint Totals						400	100	50	44	0.9	505	400	100	50	44	0.9	505		
	4100141	0.00	0.00	1		1 00	1 70	1 -	T	400	T =0			505								
	1/29/16	8:30	8:33	28	32	80	70	/	400	100	50	44	0.9	505	16	4	2	2	0.04	20	Yes	Surfacing out of well < 1 gallon cut flow rate
6		8:40	8:44				50	5							40	10	5	4	0.09	50	Yes	Still surfacing, stop injection, will add to Point 7
		Р	oint Totals						400	100	50	44	0.9	505	55	14	- /	6	0.12	70		
									ı									1				
26	1/29/16	9:00	10:21	27	31	70	65	/	400	100	50	44	0.9	505	400	100	50	44	0.90	505	No	
		В	oint Totals						"DEE!	1055	"DEE!	"DEEL	"DEEL	*DEE!	"DEE!	"DEEL	"DEEL	*DEE!	*DEE!	"DEEL		
		Р	UIIIL TULAIS						#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!		
	1/29/16	13:13	14:25	28	32	85	80	7	400	100	50	44	0.9	505	400	100	50	44	0.90	505	No	
5	1127110		oint Totals	20	JZ	00	00	,	#RFF!	#RFF!	#REF!	#REF!	#RFF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	110	
			onic rotals						πIXEI:	#IXLI:	#IXELL:	#IXELL:	#IXELL:	#IXEI:	#IXEL:	#IXELL:	#IXELL:	πIXEI:	πIXLI:	#IXELL:		
	1/29/16	13:20	14:15	28	32	80	75	7	400	100	50	44	0.9	505	259	65	32	28	0.58	327	Yes	Surfacing out of IW -33, approx 3 feet North
8	1/2//10	14:15	14:54	20	32	- 00	65	5	400	100	50		0.7	505	141	35	18	16	0.32	178	103	Surfacing out of the 35, approx 3 feet from
Ĭ			oint Totals					_	400	100	50	44	0.9	505	400	100	50	44	0.9	505		
									100	100	- 00		0.7	000	100	100	00		0.7	000		
	1/29/16	13:50	15:07	28	32	75	70	7	400	100	50	44	0.9	505	400	100	50	44	0.90	505	No	
3	1127110	10.00	10.07	20	32	7.0	,,,		400	100	- 00		0.7	000	100	100			0.70	000	110	
_		P	oint Totals						400	100	50	44	0.9	505	400	100	50	44	0.9	505		
									-100		-00			-000					- 0	-000		
	1/29/16	13:45	14:15	28	32	85	80	7	400	100	50	44	0.9	505	148	37	19	16	0.33	187	Yes	Surfaing out of IW -33, approx 3 feet South
10		14:15	15:26		- OL		75	5							252	63	31	28	0.57	318		
			oint Totals						400	100	50	44	0.9	505	400	100	50	44	0.9	505		
		Page To	tals												#REF!	#REF!	#REF!	#REF!	#REF!	#REF!		

BOS 200 Injection Log																							
Project No.:		Site:			oad Super	rfund Site				AREA:							Α					Page: 2	
			cience, and Techno Houston Texas	logy		•				d Product: tion Crew:				TII	El Haley, Rich	HC - L, Dry N			Ditulaki			Date(s): 1/29/2016 Drill Rig:	_
ridai ess.	11000 3018	es Ruau, r	Housion Texas						IIIJeci	uon crew.				131	ialey, Ricii	rreeman, L	Javiu Fuilla	на, Бугон г	rituiski			illi kig.	=
Area B Point No.	Date (2015)	Start Time	End Time	Top Interval Depth (feet)	Depth (feet)	Initial Press. (psi)	Flow Press. (psi)	Flow Rate (gpm)	Target Water (gal.)	Target EHC - L (gal.)	Target Dry Mix (lbs)	Target KHCO3 (lbs.)	(Its)	Target Total Volume (gal.)	Injected Water (gal.)	Injected EHC - L (gal.)	InjectedD ry Mix (Ibs)	Injected KHCO3 (lbs.)	Injected DHC (Its)	(gal.)	Surfacing Yes or No	Notes/Comments:	
11	1/29/16	14:35	15:56	28	32	80	75	7	400	100	50	44	0.9	505	400	100	50	44	0.90	505	No		_
11		Po	oint Totals						400	100	50	44	0.9	505	400	100	50	44	0.9	505			
1	1/29/16	15:18	16:35	28	32	75	70	7	400	100	50	44	0.9	505	400	100	50	44	0.90	505	No		_
'		P	oint Totals						400	100	50	44	0.9	505	400	100	50	44	0.9	505			
	1/20/1/	15:45	16:58	07	21	00	1 75	7	1 400	100	Ε0.	1 44	0.9	FOF	400	100	I FO	44	0.90	LOC	N-		7
12	1/29/16			27	31	80	75	/	400	100	50	44	0.9	505	400	100	50	44	0.90	505	No		_
		Po	oint Totals						400	100	50	44	0.9	505	400	100	50	44	0.9	505			
	1/29/16	16:05	17:17	28	32	85	80	7	400	100	50	44	0.9	505	400	100	50	44	0.90	505	No		\dashv
4			-lot Tatala																				
		P	oint Totals						400	100	50	44	0.9	505	400	100	50	44	0.9	505			4
		Pi	oint Totals						#RFFI	#RFFI	#DEEI	#RFFI	#RFFI	#RFFI	#RFFI	#RFF!	#RFF!	#RFF!	#RFF!	#RFFI			
			onit rotals						#KEI:	#REI:	#REI:	#KEI:	#NEI:	#KLI:	#KLI:	#KEI:	#KEI:	#NEI:	#NLI:	#REI:			=
		Di	oint Totals						#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!			
			onit rotals						#KEF!	#REF!	#KEF!	#KEF!	#KEF!	#REF!	#REF!	#REF!	#KEF!	#REF!	#KEF!	#KEF!			7
		Pi	oint Totals						0	0	0	0	0	0	0	0	0	0	0.0	0			
									U	U	U	U	U	U	Ū	U	U	Ū	0.0				_
		Po	oint Totals						0	0	0	0	0	0	0	0	0	0	0.0	0			
				-																			4
		P	oint Totals						0	0	0	0	0	0	0	0	0	0	0.0	0			
		Page To	tals												#REF!	#REF!	#REF!	#REF!	#REF!	#REF!			
		- ago 10																					

												BOS 20	0 Injecti	ion Log									
Project No.:	15250.02	Site:		Jones R	oad Supe	rfund Site				AREA:							A/B					Page:	1
Client:	EA - Engir	neering, S	cience, and Techno	ology					Injected	d Product:					Е	HC - L, Dry I	Mix, KHCO3,	DHC				Date(s):	1/30/2016
Address:	11600 Jon	es Road, l	Houston Texas			_			Injec	tion Crew:				TJI	Haley, Rich	Freeman, I	David Fonta	na, Byron l	Pitulski			Drill Rig:	
		1	1	1		1	1	1					1	1	1	1	1	1	1	1	_		
Area Point No.	Date (2015)	Start Time	End Time	Top Interval Depth (feet)	Bottom Interval Depth (feet)	Press. (psi)	Flow Press. (psi)	Flow Rate (gpm)	Target Water (gal.)	Target EHC - L (gal.)	Target Dry Mix (lbs)	(lbs.)	Target DHC (Its)	Target Total Volume (gal.)	Injected Water (gal.)	Injected EHC - L (gal.)	InjectedD ry Mix (Ibs)	Injected KHCO3 (lbs.)	Injected DHC (Its)	Injected Total Volume (gal.)	Surfacing Yes or No	Notes/Comments:	
40	1/30/16	9:25	10:43	27	31	80	75	7	400	100	50	44	0.9	505	400	100	50	44	0.90	505	No		
13			oint Totals						400	100	F0.	44	0.0	FOF	400	100	50	4.4	0.0	FOF			
		Р	UIII TUIAIS						400	100	50	44	0.9	505	400	100	50	44	0.9	505			
	1/30/16	9:22	10:35	27	31	100	95	7	400	100	50	44	0.9	505	400	100	50	44	0.90	505	No		
21	1100110	7.22	10.00	21	31	100	,,,	·	400	100			0.7	000	100	100			0.70	000	110		
		Р	oint Totals						400	100	50	44	0.9	505	400	100	50	44	0.9	505			
_	1/30/16	10:04	11:16	28	32	80	70	7	400	100	50	44	0.9	505	400	100	50	44	0.90	505	No		
2		P	oint Totals						400	100	50	44	0.9	505	400	100	50	44	0.9	505			
		•	onit rotals						400	100	30	44	0.9	303	400	100	30	44	0.9	303			
	1/30/16	10:06	11:18	27	31	75	70	7	400	100	50	44	0.9	505	400	100	50	44	0.90	505	No		
22																							
		Р	oint Totals						400	100	50	44	0.9	505	400	100	50	44	0.9	505			
	,		1							ī				•	•	1	,	•	•	T			
35	1/30/16	12:43	15:11	29	33	100	90	7	850	100	50	88	1.8	955	850	100	50	88	1.80	955	No		
		P	oint Totals						#RFF!	#RFF!	#RFF!	#RFF!	#RFF!	#REF!	#RFF!	#REF!	#REF!	#REF!	#REF!	#RFF!			
		•	onic rotals						#KLI:	#KLI:	#KEI:	#KLI:	#KLI:	#KLI:	#KEI:	#KLI:	#REI:	#KLI:	#KEI:	#KLI:			
32	1/30/16	13:15	15:42	28	32	90	80	7	850	100	50	88	1.8	955	850	100	50	88	1.80	955	No		
32		P	oint Totals						#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!			
										1				•	•			•	•	1			
	1/30/16	13:09	15:35	29	33	75	70	7	850	100	50	88	1.8	955	850	100	50	88	1.80	955	No		
36			oint Totals						850	100	50	88	1.0	955	850	100	50	88	1.8	955			
-			UIII TUIAIS						850	100	00	88	1.8	900	850	100	00	88	1.8	900			
	l		1	1	1	I							ı				1						
		Р	oint Totals						0	0	0	0	0	0	0	0	0	0	0.0	0			
		,					,	,						,	, and the second	_		,	,				
		Щ_																					
		Р	oint Totals						0	0	0	0	0	0	0	0	0	0	0.0	0			
		Page To	tals												#REF!	#REF!	#REF!	#REF!	#REF!	#REF!			

												BOS 20	0 Injecti	ion Log									
Project No.:	15250.02	Site:		Jones R	oad Supe	erfund Site				AREA:							В					Page:	1
Client:	EA - Engir	neering, S	cience, and Techno	logy					Injected	Product:					Е	HC - L, Dry l	Mix, KHCO3,	, DHC				Date(s):	1/31/2016
Address:	11600 Jon	es Road, l	Houston Texas			_			Injec	tion Crew:				TJI	laley, Rich	Freeman, I	David Fonta	ana, Byron I	Pitulski			Drill Rig:	
		1						1			ī	ı	•	1		1	,	,	•				
Area Point No.	Date (2015)	Start Time	End Time	Top Interval Depth (feet)	Depth (feet)	Press. (psi)	Flow Press. (psi)	Flow Rate (gpm)	Target Water (gal.)	Target EHC - L (gal.)	Target Dry Mix (lbs)	(lbs.)	Target DHC (Its)	Target Total Volume (gal.)	Injected Water (gal.)	Injected EHC - L (gal.)	InjectedD ry Mix (lbs)	KHCO3 (lbs.)	Injected DHC (Its)	Injected Total Volume (gal.)	Surfacing Yes or No	Notes/Comments:	
/2	1/31/16	7:57	10:22	50	54	80	70	/	850	100	50	88	1.8	955	850	100	50	88	1.80	955	No		
62		D	l oint Totals						850	100	50	88	1.8	955	850	100	50	88	1.8	955			
			OIIIC TOTALS						850	100	00	ŏŏ	1.8	955	850	100	50	ŏŏ	1.8	900			
	1/31/16	8:00	10:25	29	33	75	70	7	850	100	50	88	1.8	955	850	100	50	88	1.80	955	No		
38									000						000								
		Р	oint Totals						850	100	50	88	1.8	955	850	100	50	88	1.8	955			
<u>.,</u>	1/31/16	8:30	10:53	29	33	80	70	7	850	100	50	88	1.8	955	850	100	50	88	1.80	955	No		
56		P	oint Totals						850	100	50	88	10	955	850	100	50	88	1.8	955			
-		•	onic rotals						000	100	30	00	1.0	700	030	100	30	00	1.0	700			
	1/31/16	8:35	10:58	29	33	85	80	7	850	100	50	88	1.8	955	850	100	50	88	1.80	955	No		
37																							
		P	oint Totals						850	100	50	88	1.8	955	850	100	50	88	1.8	955			
			T				T	_	1		T												
58	1/31/16	11:45	14:06	29	33	80	75	/	850	100	50	88	1.8	955	850	100	50	88	1.80	955	No		
		P	oint Totals						#RFF!	#RFF!	#RFF!	#RFF!	#RFF!	#RFF!	#RFF!	#REF!	#REF!	#REF!	#REF!	#RFF!			
									#IXLI:	#IXLI:	#IXLI:	#IXLI:	#IXLI:	#IXLI:	#IXLI:	#IXLI:	#IXLI:	#IXEI:	#IXLI:	#IXLI:			
51	1/31/16	12:17	14:30	29	33	70	65	7	850	100	50	88	1.8	955	850	100	50	88	1.80	955	No		
31		P	oint Totals						#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!			
	ī		1		1					ī				•	1	,	,	1	•				
	1/31/16	12:15	14:28	29	33	70	65	7	850	100	50	88	1.8	955	850	100	50	88	1.80	955	No		
42		D	oint Totals						850	100	FO	00	1.0	955	050	100	50	00	1.0	٥٢٢			
			OIIIC TOTALS						850	100	50	88	1.8	900	850	100	50	88	1.8	955			
				1																			
		Р	oint Totals						0	0	0	0	0	0	0	0	0	0	0.0	0			
			-lat Tatala												_								
		Р	oint Totals						0	0	0	0	0	0	0	0	0	0	0.0	0			
		Page To	tals												#REF!	#REF!	#REF!	#REF!	#REF!	#REF!			

												BOS 20	0 Injecti	ion Log									
Project No.:	15250.02	Site:		Jones R	oad Supe	erfund Site				AREA:							В					Page:	1
Client:	EA - Engir	neerina. S	cience, and Techno	loav					Injected	d Product:					E	HC - L, Dry I	Mix, KHCO3	DHC				Date(s):	2/1/2016
			Houston Texas	- 37		_				tion Crew:				TJ		-		ana, Byron I	Pitulski			Drill Rig:	
		,							,						· j, · · · · ·	,		, - j					
Area Point No.	Date (2015)	Start Time	End Time	Top Interval Depth (feet)	Bottom Interval Depth (feet)	Press. (psi)	Flow Press. (psi)	Flow Rate (gpm)	Target Water (gal.)	Target EHC - L (gal.)	Target Dry Mix (lbs)	(lbs.)	Target DHC (Its)	Target Total Volume (gal.)	Injected Water (gal.)	Injected EHC - L (gal.)	InjectedD ry Mix (lbs)	Injected KHCO3 (lbs.)	Injected DHC (Its)	Injected Total Volume (gal.)	Surfacing Yes or No		
	2/1/16	8:00	10:26	29	33	70	65	7	850	100	50	88	1.8	955	850	100	50	88	1.80	955	No		
54			1																				
		Р	oint Totals						850	100	50	88	1.8	955	850	100	50	88	1.8	955			
																						1	
40	2/1/16	8:05	10:31	29	33	75	70	/	850	100	50	88	1.8	955	850	100	50	88	1.80	955	No	ļ	
40			sint Totals	1					050	400	50	00	4.0	055	050	400	50	00	4.0	055			
		Р	oint Totals						850	100	50	88	1.8	955	850	100	50	88	1.8	955			
	2/1/16	8:10	10:37	29	33	80	75	7	850	100	50	88	1.8	955	850	100	50	88	1.80	955	No		
49	2/1/10	0.10	10.37	29	33	00	73	,	630	100	30	00	1.0	733	000	100	30	00	1.00	733	INU		
.,		P	oint Totals						850	100	50	88	1.8	955	850	100	50	88	1.8	955			
																•	•						
	2/1/16	8:15	10:42	29	33	75	70	7	850	100	50	88	1.8	955	850	100	50	88	1.80	955	No		
46																							
		P	oint Totals						850	100	50	88	1.8	955	850	100	50	88	1.8	955			
50	2/1/16	12:40	15:06	29	33	65	60	7	850	100	50	88	1.8	955	850	163	115	250	8.33	1033	No	Added extra materials as per of	
		15:30	17:00	29	33	65	60	7												630		Tank and system rinse, used anaer	obic water
-		Р	oint Totals						#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!			
	2/1/16	12:50	15:16	29	33	75	70	7	850	100	50	88	1.8	955	850	163	115	250	8.33	1033	No	Added extra materials as per of	client
44	271710		oint Totals	27	33	7.0	, 0	·	#RFF!	#RFF!	#RFF!	#RFF!	#RFF!	#REF!	#RFF!	#RFF!	#RFF!	#RFF!	#REF!	#REF!	110	Added Sale Metoricis de por	JIIOTIK
-									#IXEL.	#IXEL.	#IXELL	#IXELL	#IKELL	#IXEL.	#IXELL	#IXEL	#IXELL	#INCI:	#IXEL.	#IXELL			
		Р	oint Totals						0	0	0	0	0	0	0	0	0	0	0.0	0			
									•														
		Р	oint Totals						0	0	0	0	0	0	0	0	0	0	0.0	0			
		P	oint Totals						0	0	0	0	0	0	0	0	0	0	0.0	0			
		Page To	tals												#REF!	#REF!	#REF!	#REF!	#REF!	#REF!			
		rage 10	ituis												#REF:	#REF:	"IXLI"	#IXEL:	"REF:	"INCI"			

Tank					Outside		
Number	Date	Time	Volume	Batch	Temputure	DO mg/L	Comments
1	1/23/16	9:00	3400	В	39	0.38	Added 4 gallons EHC- L and 20 lbs Sodium Sulfite
2	1/23/16	9:20	3400	В	39	0.33	Added 4 gallons EHC- L and 20 lbs Sodium Sulfite
3	1/23/16	9:40	3400	В	39	0.28	Added 4 gallons EHC- L and 20 lbs Sodium Sulfite
1	1/23/16	15:00	3400	В	57	0.33	G
2	1/23/16	15:25	3400	В	57	0.23	
3	1/23/16	15:45	3400	В	57	0.26	
1	1/24/16	10:45	3400	В	61	0.33	
2	1/24/16	11:00	3400	В	61	0.32	
3	1/24/16	11:30	3400	В	61	0.3	
3	1/25/16	15:00	3400	В	58	0.13	Added Entire Batch B Solution
3	1/26/16	8:00	3400	В	44	0.23	
3	1/26/16	14:45	3400	В	46	0.1	ORP -354, New B Batch
3	1/27/16		3400	В			
1	1/27/16		3400	В			
3	1/27/16	13:36	3400	В	52	0.2	ORP - 304
1	1/27/16	16:04	3200	Α	51	0.22	
3	1/28/16	7:25	3200	Α	39	0.23	ORP -344
1	1/28/16	7:40	3200	Α	39	6.4	Added 20 lbs Sodium Sulfite
1	1/28/16	12:14	3200	Α	59	0.33	
3	1/28/16	16:00	3200	Α	66	0.24	ORP - 314
1	1/29/16	9:40	3200	Α	54	0.25	
3	1/29/16	13:00	3200	Α	72	0.28	ORP - 316
1	1/30/16	7:30	1600	Α	55	0.39	
3	1/30/16	9:06	1600	Α	59	0.22	ORP - 336
2	1/30/16	9:30	3400	В	59	0.21	
3	1/30/16	12:24	3400	В	71	0.22	ORP - 320
1	1/30/16	15:00	3400	В	75	0.23	
3	1/31/16	7:32	3400	В	63	0.1	ORP - 392
2	1/31/16	8:00	3400	В	63	0.34	
3	1/31/16	11:40	3400	В	72	0.24	
1	1/31/16	13:00	3400	В	75	0.37	

ATTACHMENT E FIELD NOTES

Location Harris Co, TX Date SIRILIU Project / Client, Ronog Rd, ESA Region DL Site walk / Pre-launch injection meeting 0935 Daport For, 5, 6 WRATHER! Wostly cloudy and becquein windy with thendostorms / kely in offernoon High 690f. Winds 20-30 mph. Church of 1 min 100% PLANFOR THE DAY: She walk with EPA/TEFO etall, injection prewalk 0938 ATTHE ON SIL TERA: Marken Lang EPA: Camile SEKO: EN Que hom as, Pat Appel DAGO West with SEKO stell for 5 year review site walk 1000- 1400 Site Walk 1405 Meet with preparty manager Jesse to go over injection activities schulched to begin next elast 1500 Meetin concluded 1555 Apart site to pake p pullet jack for down unleveling in am.

Project/Client Dores Rd, EAA Region VI

Site world Mobilization for injection activities

0430 Deput to office WESTER: Mostly Clarky early, hen sunshing In the after room High 53 °F Winds NAW at 15-25 mph. 0200 Deport for site 0705 Swely Machine * Truck with injection dums on side. PLAN FOR THE DAY: Begin Mobilizing Equipment and maderials + Bill of lawling has no backeria for mounis - B: 11 of luding also has a liftgute truck being sent by Dwelity Transport with a lift sake. The truck had neether. The cherge rate will de checked. 0745 Unloading of drums bagues Servity Fence in place X Phono: unloading and learns for frailes * OHC + K Exculurate not on triday delice cy. will contish with Proxy 0200 Contirm with Proxy chem that 2nd deliver will take place Manday marning dans 1030 Aguy Mitsubish: SUVIS in Rencelon crea. Tags are long expired. Et, had men formed SUV to properly management. Vista and CA

Location Hwi	6 TX		Date	0/03/14	35 -
Project / Client_	Joves Ru	1 6w	Plune,	ERAG	
Mobilizar	lon	ann a seile com the degree and the Select Physical contribution	:		

0700 Report For Office WENTRER: Suny, hal 578 winds 1866 and icerable PLAN FOR 90/6 DAY: Continue staging equipment. Tontinge to condition water to make it anerobic 0730 Sweets Mectine 0850 00 cheek on 3 fanks has diagra Mix funk 1: 0.30 Mix lanka: . 33 Batch tank: 0.28 (funk 3) X Phas: Plumous preport tourks 1120 Supplies shipper bringing replacement bull welve for puriping tracter will not de 1140 Philo: Stoged dums behind shapping center 1430 Prims taget behind building where preparty manger Suggested 1430- to Set up completal for there 1530 april 5.4

Location Hwris Co, TX	Date 01/25/14	37
Project / Clienty Jones RJ GW	7 7	
Mixing Injection		
The state of the s		
00 mole: 0.20 7	0.13	
485 DO: 1.23 m/1	050	
ORP - 360	- 507	
Batch 1: 8 drums EAL		
8 Bags KHCO3	ENC O.	
250/ 1/110	2 2 7 7	
25 Bass KHCO3 20 Bags Sodem 3400 Sal warter	< 10/	
O Bugg Sodum	Sulfite por ten	6
3900 gal water		
1530-1800 Contypue injection	n prep	
was Deput Site		
		-
		_
		الت

13/2 Point 53 Complete 955 de blu gel

= 1. 4 foot rise in Man-ow over 4hrs

1832 MW-OLE Drw 30.95

Location / twin (0, TX Date 01/24/15 Project / Client , Fores Pol Gw Plume , EAA G au Incursos 0630 Departor Site 0700 Arrangite WEATHER. Diecast with rain stowers. Migh New 550 Winds NNE at 10 - 20mply Chace of ruin 60% 0750 Swely Meeting RAN FOR THE ASY: (Segin injection of B concentration points Will dreck mix DOA ORP one las titume before injulia. Proposed Points (B conc.) 55 + 58 (shallow) (cl , 60 (despossible) 0735 Begin drains point 55 * Hoto, druing rads at point 55 Pre Injection Chemistry: DO: 0.27 mm/1 0849 Begin adding OHC to injectable 7.22 XPhoo: Addies DHC to mix Ofly lain 55 injection sherted 0924 - 5.05 gul min feeled point 55 at 50ps; 0926 Point GB started - 5. 50 gpm at 52 pm 0931 Vister will stert dowing oads at point & (dep)

Project / Client Janus Rd GW Phyme, RA C GW Incomes 1817 Post 39 Cayster 955.0 get 1830 Partch 43 No Chaye (B cone) - 8 drums EHC - 8 days dry mix - 7.5 days KHO3 * DHC will not be added in til morning Mas Dapart Site

Location Hurris Co, TX Date 01/27/16 Project/Client Jones Rd GW Plume, ERA G GWInjection 1000 Point 33 started - Acrial Video + Pus Jaken Dake Point By showled 1047 Additional line bules / hose polecios relived for ite Thos Custa cheuning drins for disposal U47 Foint 60 completed 955 1148 Point 52 completed 955 gal 120 Bajin Prepon Rouch 44 (Bears) - Point 59 will be next, 1217 Sein druing point ST + Plus driving point 59 1220 Will begin driging point 38 1253 Point 34 completed 955 gal 1255 Begin druins point 48 1305 Diving at point 59 will not extend part 50'. Injection zone is \$ - 4le-50 653 Injection at 39 proceeding with no issues * Photo Injection of point 48 1415 78200 Geographe Broken Down 1445 Stort injection on point 31 1455 Begin driving point 29 15 de Bosin injection on pt 29

Location KWISCO, TX Date 01/27/16

Project / Client Jones Rd CW Plus , &M Region TI OW Injections of Micho: Visto repairing borelide with concete (00) Visou pre conditioning wento in tank I for A concentration injections feeling place Landriow -00.22 Tank - Tank 2 contains pre-conditional number for B concentration + No Change in Barten 4 (Bronc.) - Hun previous mixes 1622 PJ 48 complete 955 sal - 1615 for pot point 59 955 gal * 78020 Geopide Still down 1642 78220 repaired/rynning (658 Beginning Batch 5 (A conc.) Mixing 1700 Poin 31 Completel 955 gal 40 1745 Poin 29 completel 955 gal 40 1745- 1830 Clean up a mix/circulate datch 1835 Depart Site

Project/Client Jones Rd GW Plune, EPA Reg. G OW Injections 0630 Daput Por S:te 0700 Herive on sile WEATHER: Suny high Ce8°F. Winds W at 5-10 mph 015 Sely Meeting PLAN FOR THE DAY: Continue injections at A concervention points Riss setup on Appoints Haml 17 00: 0.23 as/1 ORP: -344 * Plato: setupon 14 4 17 0851 14 of 7 och injecting * Physic Driving pt 28 * Noto: Spill kit for possible daylighting * Owner of Mckong Restaurn t complained about order to off his parting spaces, We agreed to shift the next 2 dering leastours for I ring to his spaces so we can reway the exclusion zone Sion the troat of his store 0924 Beesin meeting point 28 I Points are taking Flirid well. 7-Ogpmat 40-ceo ps. Vista vill drive additional rody at ots 15 and 2 to speed operation

Project / Client Jones Rd GW Mume GN Injections 0969 Payhyhring out of MWOI --will reduce pressure 1009 Stoot injection at Pt 16 0959 Point 14 completed 450 gal 1503 Point 17 completed 450 gal 1008 Point 20 injection Startel 1023 Point 23 injution completel 1130 Preputy manager Jesse is upset about store kont jujection locations. He said we we taking if too much space. I explained to him up are trying to chew store trant, locations as guilty as possible with priority. We aim to hime all store front injection points done, by end ofday, 1200, Mekons Store Front Clear of agropment. Aluxo Mckons store for thereel 1223 Voint 18 pains, hooked up to injection tailer * Coint 16 Deinispuchel. - both soil need * Point 24 nil de moved 3 Feet west to avoid proximity to CUT-01 123 boint 8 injection showted

Location fluris Co. TX	Date
Project/Client Tones Rd GWF	lume
6w Tajections	
1302 Pointle not feeling This	/
1316 Bezin druming point 25	5
extend to the something	and a Course
Those Orving and remove	in park Ket 25
1351 Degin injecting point	28,
How User Degins A cone	ntention in is
480 Part 25 Come 10 41	
- Point 23 completed,	
1945 Setup on AUD point	429
1548 Barch # Co Camplel	
ORP: -318 mg//	
* Tricitions will continue o	4 // (re-aveled)
in begin of \$24	
(Codo Daylish y new point	19 Cifal From
ahose and not legand for	on the ground
* Photo: Liquid on ground	nu pt19
* Phopo: Liquid on ground 1645 Bain injections at 16 1730 Point 24 Complehel	· 4 2cf
1730 Point 24 Complekel	450 gel
1734 Point We Coppleter	1
1734-1840 Cleanup.	
1850 Deput Site - 10 Apo.	nts completel

Project / Client James Rd Gw Plume, ESA G GW Injections Hilities anyway. The newpoint to soft Ce of will be approximately /2 distance deliver the 2 points. The comment point Ce+7 will recieve sloude whome or 100 * Moo: location ? in itslifychistor 0925 Pumping on 26, 19, 27 and 9 Thus Point Cet 7 new location Tojections Campleled 092819 injection completed 0935 27 injection completed * Tunk I conditioned 0951 Paint (e+7 Class gal) started no daylighting from My 02 as of yet 10 de Point 20 completed * Riz will be moved schind brilding for wints 01-05 KPhoto: Ens settingup on pt 5 1037 Ris setting upon point 13 115 Begin mixing batch 47 (A conc) + This Cleaning dryns to disposal Conto. 70 gal prior to duy capter Point 6 +7 946 galloss

Location Hunis Co, JX Date 0/29/14 Project / Client Sans Rd Gw Plume EPAGE 6W Fijection Point 6+7 Emoshed at 1215 - Points, 05 + to driven ready for injection Bath ORP + DO readys: 12188 OR1: -316 13:12 - Point 05 - Mich Regin - 80 psi/7 gallons 12:15 - 03 driving point 03 Griss 13:15 - drum point 08 12:32 13:33 - Begn, drain point 10 13:58 - complete draining point 10 Begin Tyechel of point 14:07 Begin drawy somt of: 21 - Captor drangt pout 11 14:10 - Bigun drang (point of 14:11 - Sun mech of port 10: 14:11 - Buyl migch of port 08/4; 14:25 Injection of port 05 computal (photo)

Location Harris Co. TX Date 01 29/2016 51 Project / Client Jones Red 6W Plyme GW Injector 14:30 - Begn nicht of post 1 15:00 - Ingenton of pont 08 combiled 15:10- point 01 - bong complete 15:15+ Begin Injector - Port of 15:14- Begin driving point 12 15:23 - Inject of point 01-15:30 - Trickth of pont 03 15:35 - Compater down port o 15:41 - Begun injection of point 12 15:42 - Conglete injection of put 1640 Begin prop at auten 8 - will be moved in morning - prep water will not neet 24 hour prep my will be trual A conc Earth or 1705 Bean pulling Point ld X Photo: Allying point for 120 Camplete Poin 03 michion

Location Hurris Co, TX Date 01/20/14 Project/Client Jones Rd GW Plume RIAG GW Injections 02-30 Deput for S. 4 0700 Arrive on site WEISTARER: FOS pury becoming mostly sunny this oftenoon high 770F. Winds SSWat 10-20 mph PLAN FOR THE DAY: Continue + complete A comentration /ocations, continue a resume B concentration locusions 0710 Sweety Meeting 0720 Begin driving locations - begin daving line outers * Will mix 18 locations north of A consentration to complete A points Batch 8 8 drums EHC & bugs dry mex 3. Co L DHC - 4 buys KHCOZ * Pholo: Se thing up sately devices for lot and driving location 13 4 Alxarions Remains d, B, 21 422 Barten & fearlines 00: 0.02 m/C ORP: -338

DDMDcconecidategasteritesia (careta control co	
Location Huris G. TX	Date 01/30/10 55
Project / Client Jones PJ Cu) Pluse
GW Injections	
1235 Shut in jewhon.	35
	-2

onest and the
- / you d - Norman
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And the World
an and a blackless

56 Location Hurres, TX Date 01/31/16 Project/Client Jones Rd GW Plame 6W Injections 0630 Separt to site 0700 Horwe on site WENTHER: (louds in the morning Some decreese in clouds late in the day, High new 80°F. Winds 55W at 10-20 mph. 0715 Every Meeting PLAN POR THE DAY: Continue B concentration injections 0720 Besis poshing rods at Co2, (dego), 38 37 and 56 - 2nd 42, 47, 58 + 51 2nd Satch Begin injections 0754 Dein injections at 62 at * Keurgate is not open. Will call Jassie to get lack combination. No shops we open Sonday 14 appears 500 lest message with property owner/manager Jessie. If we do not hear a response we will cut & replace the locks 0958 Besin steering for butch 11. 1018 Point 38 complete, 1025 Point 37 complete > Photo folling rads form, points 37058 1110 Yours 56 Ced complete desinpullas

Location Harris 6, 7x Date 01/31/16 Project / Client Jones RJ GW Plume GW Friedwas * Photo: Mixing KHLOZ into batch / 1117 Usta desins diving sods at part 47 Batch Il mix inclinised - DO 0.24 nyll - ORP-320° Sphore: Working wen 42. 47,5851 1337 Begg mining butch /2 1400 Pant 47 completed 148 Point 57 completed 1500 POINT OF Saus pulled 1530 - 1730 Cleany 1745 - Deport site

Project/Client Jones & GW Plume

(W Injections

Date 02/20/10

59

1000 Points 40, 44, 49, 50 , nachin completo Batch 13 60 Drums EHC 13 Bags Dy Mix 15 Bays DCO3 25L DHL 2515 sal 40 (cauche) 1044 Bosin Mixing Bull 13 1046 Begin pulling lads at points 40,46, 48,50 Williagin driving remaining points 1005 Injection Mixed 00: 0.24 ms/L. ORP: -216 13 8 Vista vegins cleaning/washing water holding tunks × Phoo: Cleans Funks. * was water deing used is anosaice water From Lenk 2. All wash water will be conjected unto last point X hoto cressive nushing staging

Project/Client Jones Rd GW Plume, EPAG

GW Injections

Ours Opport for site

0700 Arrue on site WEATORE Purtly Cloudy Skies, Holy 7408 Winds www of 10-15 mpl 0715 Safety Meeting PLAN FOR THE DAY! Continue de-mot from site 0720 Pregin Stagins Geoproles for de-mal & Photo: 5 lapus Geoprobes * Phos. All disms removed 4 used have behind Evilding 0930 fain for rent picks up butch took 1247, Transporter on site to local materials * Thicks: Couldes Geoprache * Vista will take the majority of the chies - Visha compt use pullets -will stenk new dring berief building 1443 Rain to Rest reforms tor, temp 42 1456 2 Rain for sent trick returns for Hogoro: luwing tunk, Thero: Panes washing Street ing area 1615 Continue power washing lot

62 11 / TI Date 02/03/16		Locati	ion		to a comparison and a graduate of the com-	to a good decision of his house of the			The state and their services the	Dat			netorano come so	. 0
62 Location Humis Co, The Date 02/02/16 Project / Client Jones Re Gew Plume	Project / Client													
1 / All I														
1500-1800 Complete de-mob, foncing, fort lift and portolet will be pulsed up oa/03 1805 Depurt site		ì												
1500-1800 Complete de nos, teners														
tot lit and portalet will be pure													-	
$\frac{\sqrt{\rho}}{2} = \frac{6\lambda/63}{1000}$														
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APPENDIX F PHOTOGRAPHIC DOCUMENTATION



Photograph No. 1 (30 November 2015) Description: Purging MW-06



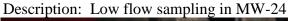
Photograph No. 2 (30 November 2015)

Description: Preparing to do low-flow sampling in MW-22

April 2019



Photograph No.3 (1 December 2015)





Photograph No. 4 (2 December 2015) Description: Water purge from MW-20



Photograph No. 5 (3 December 2015)

Description: Low flow purging and sampling MW-02



Photograph No. 1 (25 January 2016) Description: EHC pre-mix



Photograph No. 2 (25 January 2016)

Description: Injection Tool

April 2019



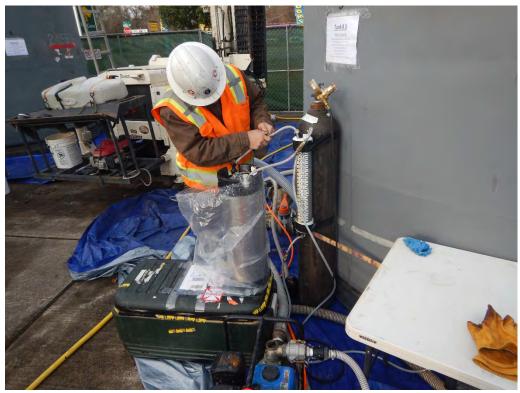
Photograph No.3 (25 January 2016)

Description: Nitrogen Tank and DHC Injection Set Up

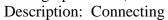


Photograph No. 4 (26 January 2016)

Description: Driving Injection Rods at Point 63



Photograph No. 5 (26 January 2016)





Photograph No. 6 (26 January 2016)

Description: Pumping EHC

April 2019



Photograph No. 7 (26 January 2016)
Description: Checking DO and ORP levels prior to injection.



Photograph No. 8 (27 January 2016)

Description: Injection rod during injection.

April 2019



Photograph No. 9 (29 January 2016) Description: Concrete repair bore hole



Photograph No. 10 (29 January 2016) Description: Daylighting from IW-3

April 2019



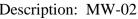
Photograph No. 11 (30 January 2016)
Description: Setting up safety devices.



Photograph No. 12 (1 February 2016) Description: Staging drums for removal.



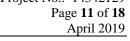
Photograph No. 1 (18 April 2016) Description: MW-02





Photograph No. 2 (18 April 2016)

Description: MW-03





Photograph No.3 (18 April 2016)
Description: MW-08 hidden under 8 inches of soil



Photograph No. 4 (18 April 2016)

Description: MW-20



Photograph No. 1(22 September 2016)

Description: MW-20



Photograph No. 2 (22 September 2016)

Description: MW-09

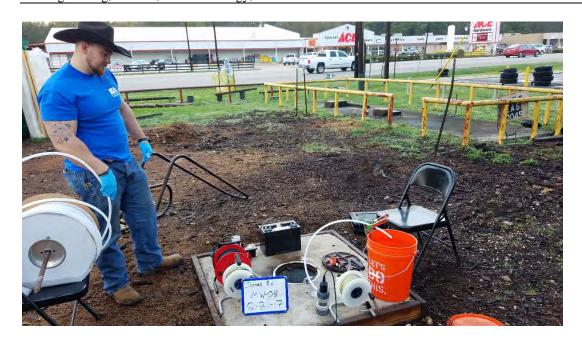


Photograph No. 1 (23 February 2017) Description: Purging MW-01



Photograph No. 2 (22 February 2017)

Description: Preparing to gauge MW-03



Photograph No.3 (21 February 2017)

Description: Setting up on MW-08 for low flow



Photograph No. 4 (21 February 2017)

Description: Location MW-20



Photograph No. 1 (13 September 2017)





Photograph No. 2 (13 September 2017) Description: Location MW-20



Photograph No. 1 (27 March 2018) Description: EHC pre-mix



Photograph No. 2 (27 March 2018) Description: EHC mixing area



Photograph No. 3 (27 March 2018)





Photograph No. 4 (28 March 2018) Description: EHC staging area



Photograph No. 5 (28 March 2018) Description: Injection point plugging

APPENDIX G STATE OF TEXAS INJECTION WELL REPORTS

STATE OF TEXAS PLUGGING REPORT for Tracking #185546

Owner:

US EPA Region 6

Owner Well #: P1 - P63

Address:

1445 Ross Ave

Grid #:

65-04-4

Suite 1200 Dallas, TX 75202

Latitude:

29° 56' 32.38" N

Well Location:

11600 Jones Rd

Lonaitude:

095° 35′ 04.6″ W

Houston, TX 77070

Elevation:

No Data

Multiple boring locations throughout the shopping center parking lot. 63 locations 10 foot on center varying in depth of 33 - 54 feet bgs. Injection of emulsified vegetable oil into each location for groundwater remediation

purposes.

Well County:

Harris

Well Type:

Environmental Soil Boring

Number of Wells Plugged:

63

Drilling Information

Company: Vista GeoScience

Date Drilled:

2/3/2016

Driller:

Mike W Martin

License Number:

59374

Well Report Tracking #430595

Diameter (in.)

Top Depth (ft.)

Bottom Depth (ft.)

Borehole:

1.5

Plugging Information

Date Plugged:

3/28/2018

Plugger: Brad Orban

Plug Method:

Tremmie pipe cement from bottom to top

Casing Left in Well:

Plug(s) Placed in Well:

Bottom (ft.)

Description (number of sacks & material)

No Data

Top (ft.)

Cement 10 Bags/Sacks

Certification Data:

The driller certified that the driller plugged this well (or the well was plugged under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the reports(s) being returned for completion and resubmittal.

Company Information: Vista Geoscience

111 Postoak Dr. Whitney, TX 76692

Driller Name:

Brad Orban

License Number:

55014

Comments:

No Data

STATE OF TEXAS WELL REPORT for Tracking #430595

Owner: US EPA Region 6 Owner Well #: P1 - P63

Address: 1445 Ross Ave Grid #: 65-04-4

Suite 1200 Dallas TX 75202

Dallas, TX 75202 Latitude: 29° 56' 32.38" N

Well Location: 11600 Jones Rd Longitude: 095° 35' 04.6" W

Multiple boring locations throughout Elevation:

the shopping center parking lot. 63 locations 10 foot on center varying in depth of 33 - 54 feet bgs. Injection of emulsified vegetable oil into each location for groundwater remediation

purposes.

Well County: Harris

Number of Wells Drilled: 63

Type of Work: Groundwater Proposed Use: Environmental Soil Boring

Remediation Borings

Drilling Start Date: 1/22/2016 Drilling End Date: 2/3/2016

 Diameter (in.)
 Top Depth (ft.)
 Bottom Depth (ft.)

 Borehole:
 1.5
 0
 54

Drilling Method: Direct Push

Borehole Completion: Plugged

Annular Seal Data: No Data

Seal Method: **Tremie** Distance to Property Line (ft.): **No Data**

Sealed By: **Driller** Distance to Septic Field or other

concentrated contamination (ft.): No Data

Distance to Septic Tank (ft.): No Data

Method of Verification: No Data

No Data

Surface Completion: Patched to match existing surface - asphalt Surface Completion by Driller

or con

Water Level: No Data

Packers: No Data

Type of Pump: No Data

Well Tests: No Test Data Specified

Bottom Depth (ft.) Description (number of sacks & material) Top Depth (ft.)

Plug Information: 1 54 **Bentonite**

Strata Depth (ft.) Water Type Water Quality: No Data No Data

> Chemical Analysis Made: No

Did the driller knowingly penetrate any strata which

contained injurious constituents?: Yes

Top Depth (ft.)	Bottom Depth (ft.)	Natural Injurious Constituents	Unnatural Injurious Constituents
33	54		Hazardous Waste Contamination

The driller did certify that while drilling, deepening or otherwise altering the above described well, injurious water or constituents was encountered and the landowner or person having the well drilled was informed that such well must be completed or plugged in such a manner as to avoid injury or pollution.

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the

> driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in

the report(s) being returned for completion and resubmittal.

Company Information: Vista GeoScience

130 Capital Drive

Suite C

Golden, CO 80401

Driller Name: Mike Martin License Number: 59374

Comments: No Data

Lithology: **DESCRIPTION & COLOR OF FORMATION MATERIAL**

Casing: BLANK PIPE & WELL SCREEN DATA

Top (ft.)	Bottom (ft.)	Description	Dia. (in.) New/Used Type Setting From/To (ft.)		
0	54	Silt & Clays	No Data		

IMPORTANT NOTICE FOR PERSONS HAVING WELLS DRILLED CONCERNING CONFIDENTIALITY

TEX. OCC. CODE Title 12, Chapter 1901.251, authorizes the owner (owner or the person for whom the well was drilled) to keep information in Well Reports confidential. The Department shall hold the contents of the well log confidential and not a matter of public record if it receives, by certified mail, a written request to do so from the owner.

Please include the report's Tracking Number on your written request.

Texas Department of Licensing and Regulation P.O. Box 12157 Austin, TX 78711 (512) 463-7880